PW

PRACTICAL WINERY & VINEYARD

JULY/AUGUST 2004

Vineyard netting deters birds

Red wine development under screwcaps

Eliminating TCA from sources other than corks

Flavor 'scalping' by closures

SHOWCASE PACKAGING

SMART VITICULTURE
Beauty, Viognier and Smart-Dyson at R.H. Philips

CORO MENDOCINO
EVERY CORO IS A SIGNATURE BLEND INDIVIDUALLY CRAFTED FROM MENDOCINO COUNTY GRAPES IN ACCORDANCE WITH STRICT CORO MENDOCINO BYLAWS. THIS WINE HAS BEEN JUDGED WORTHY BY A SERIES OF INDEPENDENT BLIND-TASTINGS AND CERTIFIED BY THE MENDOCINO WINEGROWERS ALLIANCE TO CARRY THE CORO MENDOCINO MARK AND LABEL.
2001
Vintage
MENDOCINO COUNTY

Zinfandel blends promote wine region

We've tightened our belt

(to reduce your costs)

From leasing in the low-rent district to making sure our pens are out of ink before we get new ones, we're cutting costs everywhere we can. And that's on top of our middleman-eliminating vertical integration and our large inventory purchased at favorable exchange rates. Now you can have the legendary Cork Supply quality at really competitive prices. How competitive? Come find out.

CORK
SUPPLY
USA

537-F Stone Road, Benicia, CA 94510 • 707-746-0353 • www.corksupplyusa.com

ENVIRONMENTAL MANAGEMENT SYSTEM / ISO 14,000

Ramondín Cápsulas, S.A. management has been audited by AENOR, complying with the requirements specified by ISO 14,000, being, once more, the first company in our industry to be awarded this certification. This new certificate, with special emphasis with the environment, continues our commitment and our constant effort to achieve total quality in the service to our customers and strengthens our position worldwide since 1890.

RAMONDÍN CÁPSULAS, S.A.
Polígono Industrial Casablanca, s/n. 01300 Laguardia. Alava. Spain.
Phone: (+34) 945 620 000 / Fax: (+34) 945 620 062
Website: www.ramondin.es / E-mail: ramondin@ramondin.es

RAMONDIN USA, INC.
2557 Napa Valley Corporate Drive, Suite G Napa, CA 94558
Phone: (707) 944-2277 / Fax: (707) 257-1408
Website: www.ramondin.com / E-mail: ramondin@ramondinusa.com

PRACTICAL WINERY & VINEYARD

JULY/AUGUST 2004 • VOL. XXVI, NO. 2

PRACTICAL
WINERY &
VINEYARD

EDITORIAL
CIRCULATION
ADVERTISING

58-D Paul Drive,
San Rafael, CA
94903-1534
415/479-5819
www.practicalwinery.com

PUBLISHER
EDITOR
Don Neel

ASSOCIATE
PUBLISHER
Tina Vierra

SENIOR
EDITOR
Carol Caldwell-Ewart

PUBLISHER'S
ASSISTANT
Johanna Rupp

ASSOCIATE EDITOR
Andrew Hidas

ART DIRECTOR
Terry Lockman
Lumina Designworks

CONTRIBUTING
EDITORS
Eleanor Heald
Ray Heald
Michael Terrien
Ed Weber
Bruce Zoecklein

CONTRIBUTING
WRITERS
Jack Heeger
Millie Howie
Jake Lorenzo
Craig Root
Dr. Richard Smart

ADVERTISING
REPRESENTATIVES
Wettstein, Nowell
& Johnson, Inc.
Leslie Chase
707/765-2546

PRACTICAL WINERY & VINEYARD (ISSN 9739-8077) is owned and published by PWV Incorporated. Published bi-monthly at subscription rate of $31/year. Outside the United States, please add $10US, sea mail; $18US, air mail. Postmaster: Please send change of address to 58-D Paul Drive, San Rafael, CA 94903. Back issues: $5 prepaid. News media may use no more than ¼ page of material per issue provided that PRACTICAL WINERY & VINEYARD is credited.

CONTENTS

5 **10 steps to successful winegrape marketing**
By Mary Baker

12 **Controlling glass quality at your winery**
By Richard Dobscha

WINEGROWING

20 **Vineyard netting — Keeping birds at bay**
By Paul Michalczyk

COVER STORY

33 **Coro Mendocino — Zinfandel blends promote wine region**
By Tina Vierra

WINEMAKING

36 **Ortman Family Vineyards — Grafting new venture to established roots**
By Eleanor & Ray Heald

44 **Flavor 'scalping' by wine bottle closures — 'Winemaking' continues after bottling**
By Dimitra Capone, Mark Sefton, Isak Pretorius & Peter Høj

56 **New twist — R.H. Phillips takes a leap with spirits packaging**
By Tina Vierra

WINEMAKING

58 **Looking in all the right places — Eliminating TCA from sources other than corks**
By Henry Work

64 **Take care of your equipment: Pre-harvest maintenance basics**
By Tina Vierra

70 **Total cost analysis of wine closures**
By Tom Atkin, PhD & David L. Sharp

76 **SHOWCASE PACKAGING**

87 **Red wines and long-term development — Ready to bottle with screwcaps?**
By Tyson Stelzer

Retrieval of netting from vines prior to harvest.

DEPARTMENTS

91 **SMART VITICULTURE**
Beauty, Viognier, and Smart-Dyson at R.H. Phillips
By Dr. Richard Smart

READER SERVICE

85 **Bookshelf**

94 **Advertiser Index**

"To stimulate continuing improvement in the wine industry."

10 STEPS
to successful winegrape marketing

BY Mary Baker,
Dover Canyon Winery, Paso Robles, CA

Grapegrowing is a tough, competitive market that's getting tougher and more competitive. Today, growers must worry about marketing as much as grape quality, because fruit can't sell itself.

Marketing is always a daunting task, but fortunately, it's easier than grapegrowing, and most of it should be done in the off-season, when you can't get out in the vineyard much anyway. If you wait until your fruit is ripening to try to market your grapes, you've left it way too late.

The following 10 steps will help you design an effective marketing program for your vineyard. You will get your information out to winemakers well before harvest — before they solidify their grape program and become swamped with the duties of crush. You will give it to them in a format they can use and review. Take time early in the year to establish this program.

Once it's established and the groundwork is done, you will be able to rely on it year after year with only minor adjustments.

KNOW YOUR CUSTOMERS

Let's start with the basics. Winemakers are customers. They are constantly approached by vendors of glass, corks, foils, labels, equipment, and supplies. These vendors bring catalogs, brochures, and informational materials. They provide website addresses and emails. They make it a point to visit the winery briefly, well before the periods when they know their materials will be needed.

In order to vend your product successfully, you must be just as professional. Therefore, the first step in implementing a successful marketing program is to develop a professional approach to your trade.

Follow the steps below and write your marketing materials now. Produce them professionally with publishing software. Outline your sales targets and presentation, and visit your target winery customers early in the year.

Once you have purchasing relationships established with winemakers, communicate with them professionally, via written reports or e-mails.

WRITE YOUR VINEYARD RESUME

Put together a savvy vineyard resume — an information sheet that you can present to winemakers well before harvest season.

Last harvest, I received a phone call from a grower that went something like this:

Grower: "Hello, is the winemaker there? Can I talk to him?"

Me: "He's here, but he's busy. May I take a message?"

G: "Well, I have some grapes."

M: "Okay, what kind of grapes?"

G: "Uh, I have some Syrah. And some Cab."

M: "Yes, how much of each is available?"

On it went, through tonnage, price, location, and so on. I found myself dragging information out of the caller as a matter of courtesy, but I was secretly thinking about unfinished sales orders, a missing crusher gasket, and ordering lunch. The caller did not strike me as someone who was knowledgeable and passionate about his vineyard.

This call reminded me of the old golf joke about the guy who dies of a heart attack on the golf course. When his golf buddy announced the news his friends were shocked and said, "What did you do?" "It was awful," his friend said. "We had to hit the ball, drag Charlie. Hit the ball, drag Charlie."

Don't be a dead-weight Charlie when it comes to sales. Have all the information ready to present to your target winemakers, get it in their hands in a tangible format for review at their convenience, and demonstrate pride and creativity in presenting your vineyard.

When writing a resume or brochure, write a brief statement of your viticultural goals first. Describe — also briefly

Harvest marketing etiquette

- Winemakers are extremely busy during harvest — particularly at small wineries where they also tend to own the business. Be considerate, and keep harvest visits brief. Offers of help are likely to be politely refused — winemakers cannot afford the time to train new volunteers, and work hazards and insurance are also issues. If you want to be cordial and make a good impression during harvest, just leave a case of good beer or fresh local produce, along with your card.
- Buy your own refractometer and pH meter, and learn how to use them. Avoid the practice of showing up at your favorite winemaker's facility at harvest and using his equipment to test your fruit. Prepare that information yourself and provide it to the winemaker in an email or written or typed on a large sheet of paper, that you fax or drop off.
- Learn field and weather averaging. As Brix measurements reach critical levels, don't panic (or at least don't let it show). Remember to test various portions of your field, and then present sectional data, along with an average. Also, remember that fluctuations in weather will affect Brix and pH readings. Start communicating several weeks before the anticipated harvest date, so the winemaker can plan for space.

— why your vineyard is where it is, and why you take pride in it. Winemakers want to be convinced that you know what you're doing — that every decision you make, from the ground up, is born from a desire to produce quality fruit.

Your vineyard-resume or brochure should answer the following:

- Varieties you produce;
- Why did you selected them for your site;
- Clone and rootstock information, along with notes on those selections;
- Age of your vineyard;
- Soils — are there different soil areas in your vineyard?
- Microclimate;
- Meteorological influences unique to the microclimate — different wind patterns, rainfall, etc.;
- Spacing;
- Slope/Elevation;
- Trellising;
- Viticultural management, acreage production, general comments;
- Digital photos, sent as .jpg or .gif attachments to email, or provided on disk;
- E-mail address and website;
- Quotations from satisfied buyers.

List vineyard statistics like trellising, spacing, slope, etc. as bullet points — avoid wasting whole sentences on data that can be more memorably presented in a list. Save your paragraphs to explain why your viticultural choices will produce great fruit.

HIT YOUR TARGET

There's a Japanese saying: "It is not enough to hit. You must also aim."

Get your information out early in the year. Select 10 to 20 wineries you would prefer to do business with. Learn about their current grape sources, and learn as much as you can about their preferences. Send your package of vineyard information with a personally addressed cover letter that stresses the benefits of buying your fruit.

Be positive and emphasize your strengths. List benefits as bullet points in your letter. Invite the winemaker to visit the vineyard, and invite him or her to ask for references, barrel samples, or whatever else you can provide. Give the winemaker as many options as possible for communicating with you.

Then choose your second-tier choices, and also send them your vineyard resume, with an invitation to visit or call. Also mail or e-mail your vineyard resume to your third-tier choices.

TURN CRITICS INTO CONSULTANTS

It's always disappointing when a winery grape buyer visits your vineyard and gives it a double thumbs down. In a competitive market, it's also critical to understand what you need to do to attract and keep buyers, so ask the buyer or winemaker for advice and suggestions — right then and there — if you can listen without anger or defensiveness.

American AgCredit
MONEY FOR AGRICULTURE

Taking Care of the Farmers Who Take Care of America

In a business defined by variables, we offer the one constant you can depend on. We will be there with the financing your vineyard needs in good vintages and bad.

We're American AgCredit and you're our only concern.

Lending to Agribusiness & Agriculture for 85 years

Santa Rosa (707) 545-7100
St. Helena (707) 963-9437
Petaluma (707) 793-9023
Ukiah (707) 462-6531

(800) 800-4865 ◆ www.agloan.com
EQUAL OPPORTUNITY LENDER

ADVERTISEMENT

Premier Power helps another winery go Solar

"Domaine de la Terre Rouge"

Would you like to see your electric meter spin backwards and have an electric bill for $11.24 or less? Put the power of the sun to work for you using a solar electric system.

Today the power of the sun continues to be seen as limitless, and America's leading wineries and vineyards are incorporating solar electric power into their long-range plans.

For Domaine de la Terre Rouge in Plymouth, CA the decision was easy. The winery production facility and tasting room for Terre Rouge and Easton wines began generating their own electric power last March with a solar energy system installed by **Premier Power**. In keeping with their environmental philosophy, installing a solar system was a no-brainer.

Bill Easton and wife Jane O'Riordan found their kilowatt usage dropped from 971 kWh a month billed last year to only 11 kWh a month this year. Jane opened her first electric bill to find, instead of hundreds of dollars in electric usage, only $11.24 for the month of March.

The winery is billed by PG&E for *net metering*, the difference between what they produce and what they use. "Once the system was installed and connected to the PG&E grid, the winery electric meter began running backwards! The cost for this type of system is reasonable when you consider the rebates and tax advantages. We expect that the system will have paid for itself in 3 years," said Jane O'Riordan.

By investing in their own solar system and becoming power producers, wineries and vineyards are taking control of their electric rates. Since the energy crisis of 2000, PG&E raised rates to pay for rolling blackouts and mismanaged energy purchases. Now businesses have an alternative to skyrocketing electrical rates by investing in their own solar systems.

Premier Power installed a 14.4kW system on the winery to take care of approximately 80% of the winery and tasting room buildings, using GE Energy 165 watt panels and Sharp Sunvista inverters. The modules are mounted on a south facing roof, which affords the best exposure, and cannot be seen from the road. The inverters are mounted inside the winery building, making it easy to monitor the production of electricity. These systems come with a 25-year warranty and last for over 30 years.

Just think, you can lock in your electric rates now and ignore those average 6.5% rate increases that the electric company charges each year (see chart). Currently the California Energy Commission (CEC) and PG&E (Self Gen Program) offer rebates which can pay up to 50% of the total cost of the solar system. What does that mean to you? If your needs are for a solar system of 30kW or less, the CEC will pay $3.20 a watt to help pay for your solar system. For wineries with higher usage needs, the Self-Gen Program will pay $4.50 a watt, or up to 50%, of the cost of your solar system.

In most cases, businesses try to install a system that will take care of most of their electrical needs. If that is not possible, a smaller system that will take care of the higher tier rates, which can go up as high as $.26 a watt, is the best solution. Solar systems create electricity just when we need it the most, on those hot summer days when everyone is using their AC.

Clean, green, renewable energy from your **Premier Power** solar system will spare the environment from harmful CO_2, Sox, and Nox fossil fuel emissions that contribute to global warming, acid rain, and smog.

Dean Marks, president of **Premier Power**, pointed out, "these systems will pay for themselves within four to eight years; then it's free electricity which translates to money in the bank. In the case of Domaine de la Terre Rouge, their rate of return (ROI) equals 14.54% (see chart). Compared to other traditional investments — stocks 12.5%, real estate 11.1%, bonds 5.2%, and T-bills 3.7% — investing in a solar electric system can take the risk out of your investment. Generous state rebates, 5-year Accelerated Depreciation, and Federal tax credits combine to provide immediate positive cash for most solar electric installations. The environmental benefits alone make installing a solar electric system one of the best things a winery can do."

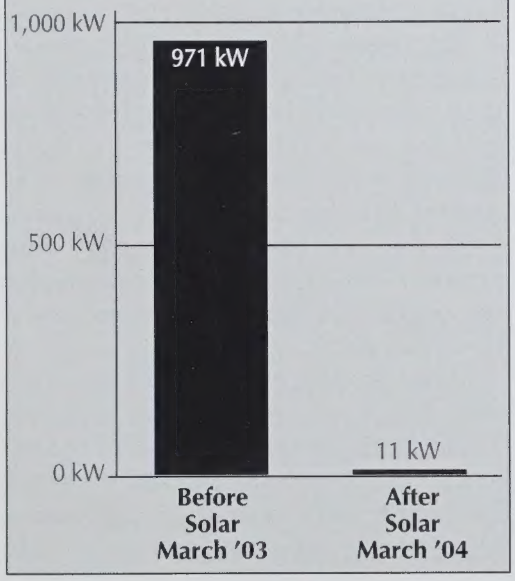
Integrating solar electricity into their energy mix, Domaine de la Terre Rouge is lowering their operating costs and reducing purchases of expensive tier rates of electricity. Domaine de la Terre Rouge is improving the health and the quality of life in Amador County, while contributing to sustainability and energy independence for California. With PG&E rates up 30% so far this year, solar becomes an even better investment.

◆

FOR MORE INFORMATION AND A FREE BROCHURE, CALL **(916) 939-0400** OR **CALCULATE YOUR SAVINGS** AT ***www.premierpower.com/calc***

BEFORE AND AFTER SOLAR

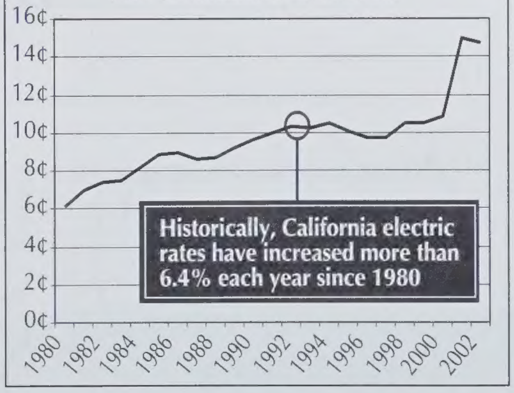
kilowatt usage – March 2003 vs March 2004



SOLAR MAKES SENSE FINANCIALLY

Solar system investment	$ 96,000
California Energy Commission rebate	– 44,889
7.5 % California Tax Credit	– 3,833
10 % Federal Tax Credit	– 4,728
Net solar investment	**$ 24,310**
Electric bill	
Before solar – March 2003	971 kW
After solar – March 2004	11 kW
Total electric bill	$11.24
Return on investment (ROI)	**14.54%**

CALIFORNIA STATEWIDE WEIGHTED AVERAGE RETAIL ELECTRICITY PRICES FOR THE COMMERCIAL SECTOR



If the buyer sees defects in the vineyard, he should be able to explain what he sees, precisely how he expects it to impact the quality of your fruit or his wine, and what should be done to correct it. If you have already taken some steps in the vineyard, be proactive — point out the problems you have identified and addressed, and ask his opinion. Ask if he would be willing to reconsider the fruit later, since changes in viticultural methods take time to have an effect.

Be professional and positive, and thank him for his suggestions. Without criticizing that buyer, immediately seek the advice of at least two other experienced viticulturists on the issues the buyer pointed out.

CULTIVATE BACKUP BUYERS

Create a "waiting list" of small wineries and home winemakers as insurance for those years when you lose a big buyer, have excess fruit, or buyers don't pick up as much tonnage as promised. Small lots may be more difficult to deal with, but more than one grower has been grateful for those little last-minute sales.

Even if you expect to be fully booked, approach a number of small wineries and ask if they would like to be on your contact list for excess fruit — even low tonnage vineyards sometimes produce more than expected, as in the bountiful 1997 harvest. Be positive and confident.

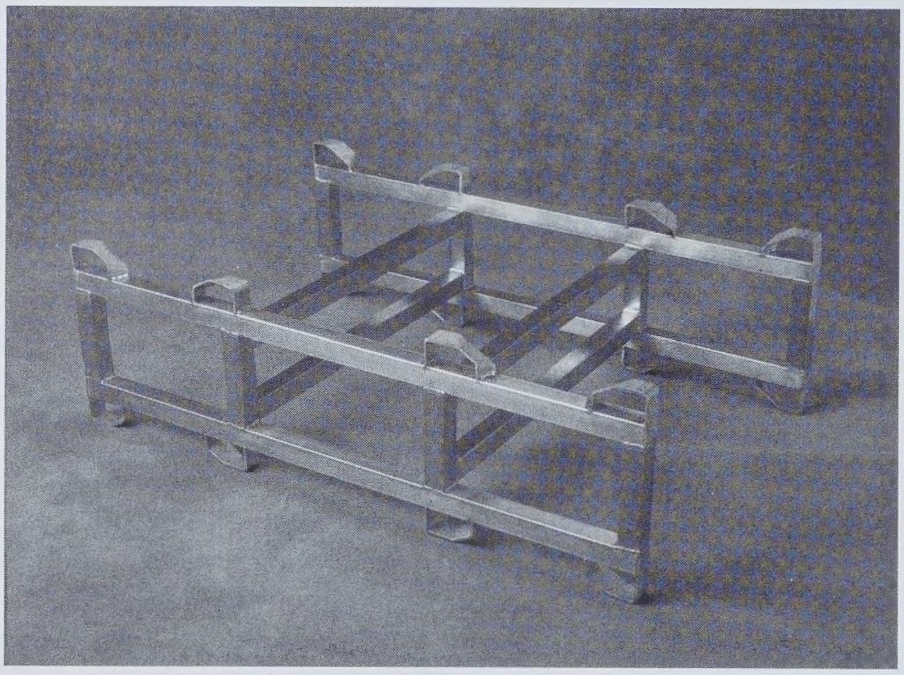
Many home winemakers looking for grapes approach wineries during harvest — just when winemakers really don't have time to deal with them. Wineries will be glad to refer hobbyists to you, but don't expect them to have a system in place for doing so. Make it easy for them, particularly for tasting room staff who field a lot of those requests, by bringing some business cards and a clear message that you are willing to place hobbyists on your waiting list.

PRE-ASSIGN VINEYARD SECTIONS

If your vineyard has distinct geographical variations — hills, ridges, steep slopes — you may want to describe and advertise the qualities of each section separately. This is a great way to interest a wider audience in your fruit.

Be aware of your buyers' preferences for select areas of the vineyard. If there is a strong demand for Pure Rock Hill and not much interest in La Merde Hollow, start keeping separate sales contact lists for each area. If you wait until the last minute, you may find yourself besieged with demands for one section of the vineyard and rejections on others.

Also, if you are selling separate vineyard lots to the same buyer and you have a quality problem in one lot but not in the others, you can discuss the problem calmly with your buyer and assure him that it is not a vineyard-wide prob-



Are you tired of replacing rusty barrel racks?

Affordable stainless steel barrel racks,

durable, corrosion and chemical-resistant.

Chipping, abrasion & impacts

are no longer an issue.

Stainless steel looks good, costs less and is maintenance-free.

In stock in Napa.

GW KENT

Toll-free: 1.800.333.4288
www.gwkent.com
email: info@gwkent.com
3667 Morgan Road • Ann Arbor, MI 48108

lem, that you are aware of it, and that you are taking steps appropriate to the geographical variation.

PROVIDE BARREL SAMPLES

Barrel samples are a great way to present the quality of your vineyard to winemakers in their favorite format — wine! Timing, consideration, and professionalism are, as always, important factors in the success of this approach.

To get barrel samples from current producers, first buy your own 375 ml sample bottles from a local laboratory or glass vendor. Label them with your vineyard name and phone number, and leave space for the winemaker to write in barrel or vineyard lots. Make sure the bottles are sterile and tightly sealed. Drop the bottles off at the winery with a request for samples — to be filled at the winemaker's convenience.

Nothing may happen for a long time. Winemakers don't like to pull tiny amounts out of a bung-full barrel; it's an annoying topping chore. When Winemaker Bob gets around to racking, adjusting, or lab-testing your lots, he'll fill up your sample bottles and give you a call.

Now you have to hustle. Barrel samples may not be cold-stabilized or completely through malolactic or contain enough sulfur dioxide to be stable. Pick them up immediately and sort them into which ones go where. Keep them cool!

Have a cover letter ready that sums up the vintage (and whatever production notes you were able to glean from the winemaker), and attach it to your standard information piece. Make sure your contact information is on the bottle label also. Winemakers have been known to use paperwork as blotters.

Barrel samples are a gift to the winemaker — a seed that may or may not grow into a fruitful relationship. Use them judiciously and only where you expect them to do the most good, and then forget them. Don't pressure a winemaker for his response.

Cork, foil, label, and glass suppliers all leave samples, in hopes that the winemaker will remember the quality of their product if he decides to make a change. If you don't hear from the winemaker, it's not necessarily a rejection of your fruit — he may already be fully committed. Quality and professionalism, however, will always be remembered.

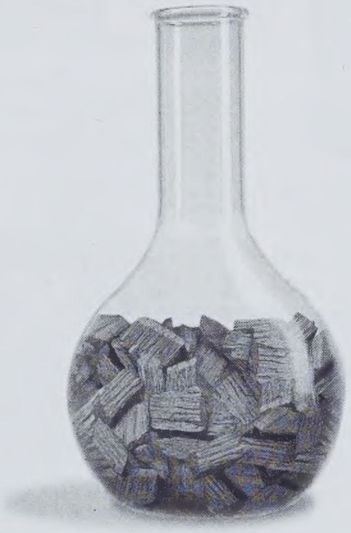
USE E-MAIL AND THE INTERNET

Use e-mail to contact potential buyers and follow up on initial contacts — it's free, and you can also attach photos of your vineyard. It also makes it much easier for a winery to respond immediately. All they have to do is click the "reply" button, as opposed to playing phone tag or composing a letter.

You can also use the Internet to locate potential buyers by searching wine sites for winery names, addresses, wine personnel,

al•che•my

alchemy: (n.) 1. An imaginary art. 2. A medieval chemical philosophy.
3. The seemingly magical power or process of transmuting something common into something precious.



Real Research for the Perfect Alternative

For some, using oak alternatives involves the guesswork associated with alchemy. With real research to support our products, World Cooperage has taken alchemy out of oak alternatives.

Our research team is dedicated to developing high quality products that perform consistently and deliver dependable flavors. Researchers James Swan, PhD, BSc, and David Llodrá, Director of World Cooperage Research, work to continually advance existing products, develop innovative new products and collaborate with you to create niche and signature products that meet your specific needs from fermentation to finishing.

We do the research and let you focus on perfecting your wine.

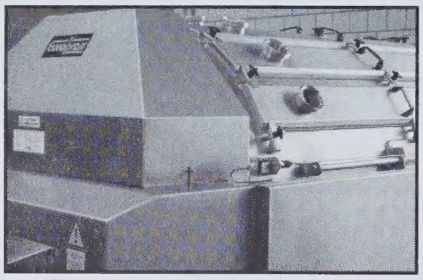
World Cooperage
OAK ALTERNATIVES

Oak Alternatives Specialist Paul Abbott • 888.33.COOPER • worldcooperage.com

Euromachines
vineyard and winery equipment company

Visit us at www.euromachinesusa.com

Reliable equipment starts with our quality product line including the **EUROPRESS,** manufactured at our parent company in Germany.



We are the exclusive North American distributor of
BRAUD Grape Harvesters

Representing quality equipment from RAUCH with pumps and destemmer-crushers and RIEGER custom stainless steel tanks to complement our full line from harvest, crush, to fermentation and storage.

Dedication to service and customer satisfaction is our commitment.

If you are looking for new or reconditioned vineyard or winery equipment, the team at **Euro-Machines** will help find the best equipment for your needs.

For a complete list of products and references, or parts and service, please contact **Euro-Machines**.

EURO-MACHINES EAST:
PO Box 843
Culpeper, VA 22701
PHONE: 540/825-5700
FAX: 540/825-5789

EURO-MACHINES WEST:
4950 Fulton Dr. #E
Cordelia, CA 94534
PHONE: 707/864-5800
FAX: 707/864-5879

www.euromachinesusa.com

and e-mail addresses. When you find an informational site, bookmark it on your browser for instant access whenever you need it. Do your research now, and upgrade your sales lists in winter months when you can't get outside—you'll be able to reach more people when you need to.

GET SOCIAL: GIVE TOURS AND SEMINARS

Getting winemakers and grape buyers to actually visit your vineyard can help you get your foot in *their* door, especially if you are proud of your location, soils, and viticultural practices. It can be difficult, however, to persuade busy winemakers to just "visit," so be sure you're covering all your bases. Here's how:

Host an annual open house or barbecue for local vintners. Offer to host or sponsor a vintner's association event, and make sure you are on your local association's contact list for potential meeting sites. Offer to be the host or speaker for local educational viticultural seminars and field trips, which are often attended by winemakers or winery vineyard managers.

If you don't feel comfortable handling the logistics of a large party or open house, hire a local tasting room manager as a consultant. The manager will be able to give you a to-do list and provide you with a list of caterers and suppliers and prices for rental tables, linens, tableware, and glasses.

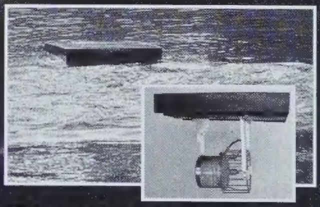
Wine trade people are just as happy with a barbecued pig and paper plates as they are with formal affairs, but make sure you have everything in place for your event, so you're not running around looking for salt and pepper shakers when you could be greeting winemakers and giving tours of your well-kept vineyard to promote future sales.

BE SAVVY ABOUT CONTRACTS

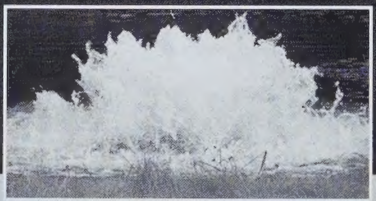
Contracts are an important way to maintain clear expectations and good relations with a winery. There are hard

Kasco® Aeration
For all your aeration requirements!

Fountains
- Best of both, aesthetics and aeration.
- Deflector technology, prop guard and bottom screen make them the least likely to clog of any major brand.



Circulators
- Move stagnant water to depths of 18 feet.
- Adjustable angle/direction.
- 1/2 hp can circulate a one acre pond, six feet deep.



Aerators
- Low profile splash is an alternative to fountains when high oxygen transfer is the goal.

Available in 1/2 hp, 3/4 hp, 1 hp and 2 hp sizes.

Affordable • Dependable • Efficient

kasco® MARINE, INC.

KASCO MARINE, INC.
800 Deere Road, Prescott, WI 54021
Phone (715) 262-4488 • Fax (715) 262-4487
www.kascomarine.com • sales@kascomarine.com

SHIPPED VIA ups

contracts and soft contracts, annual and long-term contracts. Review several different types and ask other growers what has been successful for them.

If you are offered a contract, read all the clauses carefully. For instance, many contracts often dictate fruit parameters of Brix and pH without giving the grower options regarding harvest timing and sales. It's also smart to get legal advice before signing a contract. A legal professional can help assure that your rights are protected.

Most wineries have fermentation space for only a portion of their projected harvest — they expect to process the fruit in lots over a period of about two months. If fruit comes in faster or more abundantly than projected, fermentors fill up, and later growers must wait.

If the Brix begins to rise over contracted levels, and you fear your sale will be jeopardized, talk to the winemaker before it is too late to find another buyer. Whatever you do, don't burn bridges with your contract winery. Negotiate, expect some losses, and utilize your backup buyers if necessary. ■

Mary Baker is a managing partner of Dover Canyon Winery, and a member of the board of directors of the Paso Robles Vinters & Growers Association.

Your source
for bulk wine, grapes, concentrate and specialty products

JOSEPH W. CIATTI COMPANY

(left to right standing)
Greg Magill
John White
Glenn Proctor
Johnny Leonardo
Chris Welch
(left to right sitting)
Greg Livengood
Joe Ciatti
John Ciatti

International Headquarters:
1101 Fifth Avenue
San Rafael, California
Telephone: 415.458.5150
Fax: 415.458.5160

Montevideo 292 • 1° Piso, Dept. 4
5500 Mendoza, Argentina
Telephone: 54261.420.3434
Fax: 54261.420.0028

1 rue d'Albisson
34000 Montpellier, France
Telephone: 33.467.913535
Fax: 33.467.913536

118 Greenhill Road
Unley, SA Australia 5061
Telephone: 61.882.725688
Fax: 61.882.725944

Eliodoro Yanez #2962
Oficina 502 Santiago, Chile
Telephone: 562.334.8011
Fax: 562.334.8013

8249 Mt. Olive Crescent
Niagara Falls, Ontario, L2H2Y9
Telephone: 905.354.7878
Fax: 905.358.6471

Controlling glass quality at your winery

BY Richard Dobscha, Chateau Souverain, Beringer Blass Wine Estates

As wine producers, why do we need to worry about glass bottles? Can't we expect perfect glass from our suppliers? The truth is, glass manufacturers do go to great lengths to control and reduce defects. They have the best systems and tools available for glass quality assurance, including automated inspection devices, statistical analysis, visual inspection, and around the clock quality control. As a result, even the best glass plants reject and re-melt 10% or more of their production.

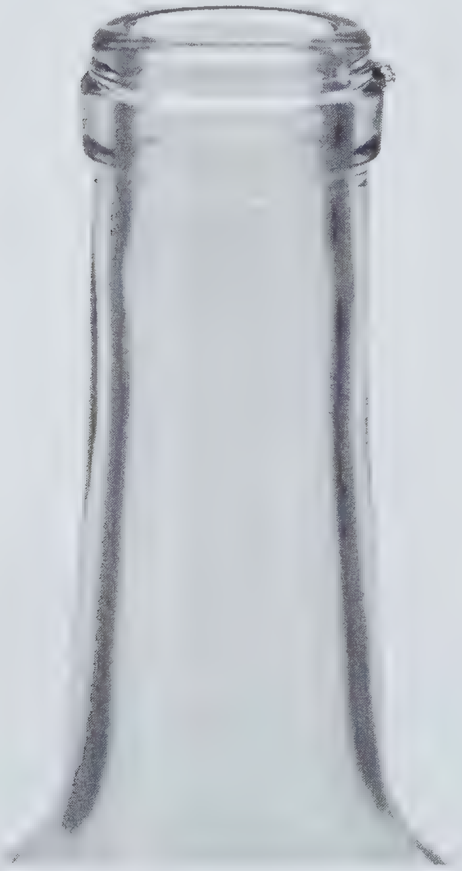


Figure I. Knock out — glass protruding from a seam on the bottle. Critical defect since a consumer may cut themselves.

Ultimately, the responsibility for glass quality control always rests squarely on the glass producer; however, no glass plant can provide 100% assurance of glass quality. Defective bottles occasionally will still make it through to winery bottling lines. That's why it is critical for wineries to institute their own glass quality assurance (QA) programs.

If you look — you will find it

In 1994, our bottling supervisor at Chateau Souverain, Beringer Blass Wine Estates (BBWE) in Geyserville, CA, was walking the line and found a bottle with a bird swing in it (Figure VII). We contacted one of our sister wineries for advice and went through the process of isolating our first critical glass defect. (How we do this isolation is described below.) We then added a full-time glass inspector at a light plate. Although we thought the inspector would be temporary, since we started looking 10 years ago, we have found literally hundreds of critical and major defects, and thus we still have a full-time glass inspector.

If you don't think you have defective glass at your winery, you probably aren't looking closely enough. If you look, you will find it.

Benefits of a glass QA program

What are we looking for? First and foremost, we need to protect our customers from what are called "critical" glass defects. Critically defective bottles have either sharp and/or loose glass within the bottle or sharp jagged edges on the outside of the bottle. Some critical defects may be difficult to pick off the line but still pose a hazard to customers. One example is a vertical check or crack in the top of the bottle that may split during corking in the winery or later when the cork is removed at home or at a restaurant.

Not only could a customer be injured, but a critical glass defect out in the market could trigger a product recall. No matter the size of your production, you probably can't afford a recall on any of your major products, and the potential damage to the brand could be difficult to overcome.

Other types of defective glass may not be hazardous to consumers but can cause serious damage to bottling equipment or significant downtime on a bottling line. Choke and slug-neck bottles (Figure III) can break filler spouts, and broken glass can tear plastic conveyors to shreds. Other defects may appear minor but are actually quite serious, such as "bruises," which are weak spots that can break under pressure. Finally, as a regulated industry, we must maintain fill volumes within the legal limits as set by the Trade and Tax Bureau (TTB).

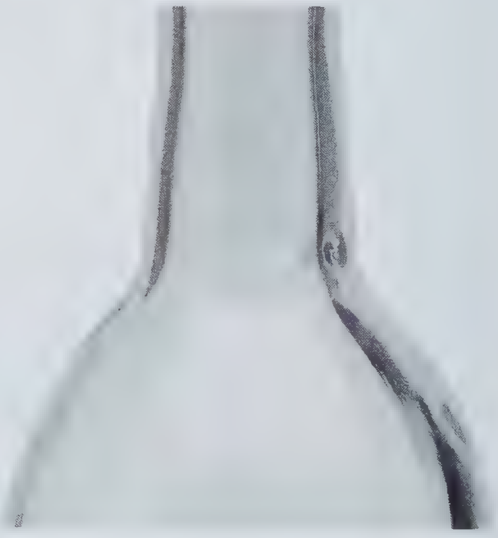


Figure II. Chip in neck (fused glass) — a hot piece of glass stuck to inside of finish of the bottle. A critical defect.

BBWE's glass QA program

At BBWE, our glass quality assurance program consists of four basic parts. First, we have ongoing dialog with glass suppliers through partnership meetings and plant audits; second, we request and inspect samples from the manufacturer while the glass is being produced; third, we do fill-volume

NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO.1715 SAN RAFAEL, CA

POSTAGE WILL BE PAID BE ADDRESSEE

PW

PRACTICAL WINERY & VINEYARD
58-D Paul Drive
San Rafael, CA 94903-2054

SUBSCRIBE!

Why chance missing an issue of the wine industry's most reliable, informative, and *practical* publication?

PRACTICAL
WINERY
& VINEYARD

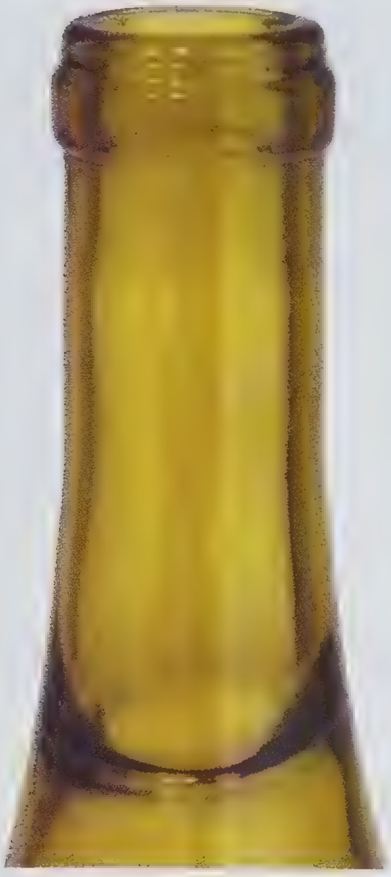


Figure III. Choke neck — considered critical when high up in the bottle neck where glass can be broken by a filler spout or cork.

checks while we bottle; and fourth, we have on-line glass inspection and defect reaction procedures.

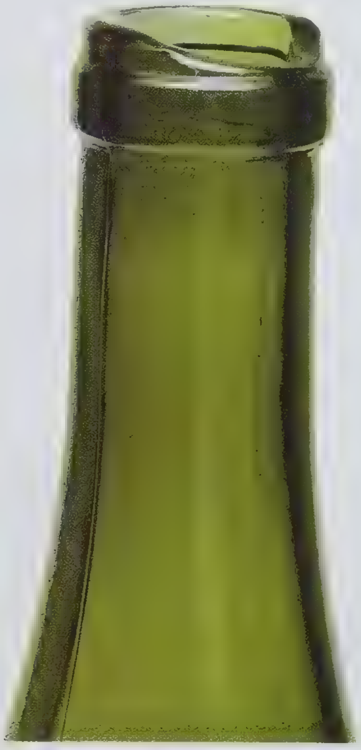


Figure IV. Unfilled finish — usually not sharp, but may affect corking. Not usually considered to be a critical defect.

Supplier relations

Establish your expectations with the glass company in writing and include specifications, so there can be no question about what is expected. Luckily, many once-common critical glass defects have become extremely rare in recent years, but you must have a clear understanding of the limits for allowable variation in the supply. Critical defects are, by definition, always outside those limits. You will also need written agreement on shipping and storage protocols, your representation expectations, color standards, and other issues.

YOU MIGHT SAY THIS BARREL IS CHARMING

Scientifically studied, then specially designed and crafted, this barrel is for Burgundian style Chardonnay and Pinot Noir.

The attributes you'll find include:

- Medium oak intensity with an accent on smoke
- Traditional Burgundian toastiness
- Provides underlying structure while encouraging classic fruit expression

Michael Cox
Schug Carneros Estate

The personality of this French oak, Burgundian style barrel appeals to winemaker Michael Cox. *"The Côte d'Or barrel genuinely supports the crisp, elegant style I want in our Carneros Chardonnays."* Call us today and see what it will do for your wines.

[illegible] 5900 • www.twboswell.com

Go to the plants you will be getting glass from, take a tour, and get to know your sales representatives, technical service representatives, and plant QA Managers. Make sure the glass company communicates your areas of concern to people on the line, so they know what is expected as well.

Ask them what QA procedures are in place and look at their automated inspection equipment. Find out how they react to different types of defects. Ask them if any of the products you are buying pose unique production challenges. Learn about the process of making glass.

Table I. Trade and Tax Bureau (TTB) Standards for Fill of Wine Containers
Title 27, Section 24.255, Paragraph B

Size of Container	Fill Tolerance
≥ 15.0 Liters	≤ 1.0%
1.0 L – 14.9 L	≤ 1.5%
750 mL	≤ 2.0%
375 mL	≤ 3.0%
187 mL	≤ 4.5%

At BBWE, we rarely deal with intermediaries for glass supply because of our size, so many of our QA procedures may be difficult for smaller wineries to put in place. Ask your sales representative what might be possible for a winery of your size.

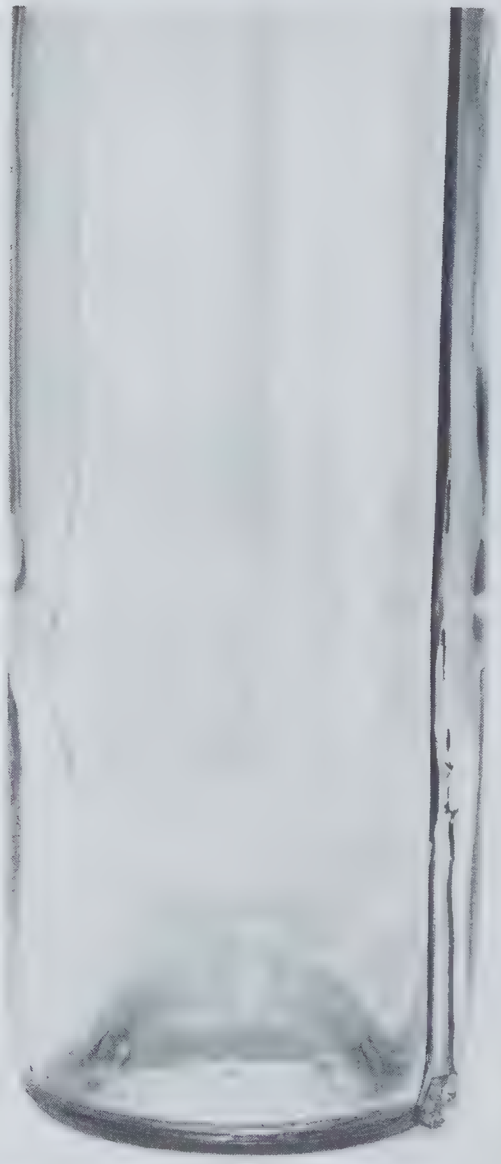


Figure V. Heavy, sharp seam — sharp, jagged glass protruding from seam of the bottle. A critical defect.

LALLEMAND

MALOLACTIC BACTERIA
CULTURES

LALVIN
Œnococcus œni
MBR® process
VP41
pour 25 hl
for 660 gals
25 g
Selected in an European CRAFT in FAIR program
produit par / produced by LALLEMAND S.A. St. Simon - France

The result of extensive research and development, LALVIN MBR *"Microbes Be Ready"* CULTURES are produced to the highest standards. It's not surprising that the finest wines are made with the finest ingredients!

DISTRIBUTED BY
SCOTT LABORATORIES

In U.S.A.: (707) 765-6666 · 800 821-7254
In Canada: (905) 839-9463 · 1 800 RX SCOTT

Glass pre-acceptance

When a glass manufacturer starts producing a run specifically for our winery, we ask for five cases of glass. Out of these five cases, we pull 10 bottles with different cavity (bottle mold) numbers and measure their fill capacity, bottle weight, and inside neck diameter at ½-inch, 1.0-inch, and 1.5 inches down from the top of the finish. We also inspect the knurling (textured surface on bottom of the bottle), finish, and coating.

Remaining bottles are each rinsed with 200 ml of water, which is filtered for particulates. The filter pad is examined under a dissecting microscope, looking for carbon, excess cardboard fibers, and glass particles. Any problems are communicated and worked out with the glass plant's quality assurance department. This is the time to pull specific cavities that have fill issues. Finding and dealing with problems at this stage is a lot easier than trying to sort things out while you are bottling.

On-line glass inspection

As explained earlier, we have a full-time glass inspector at a light plate on each of our BBWE bottling lines. Each inspector is trained by our QA staff to recognize basic glass defects. If a major or critical glass defect is found, if the inspector is unsure of what the defect is, or if too many cosmetic defects are coming through the line, they signal our QA department. QA staff may then tally the number of defects and compare it to an established acceptable quality level (AQL). If the quantity is out of specification for that defect, the response would be to isolate the problem ware and visually inspect 100% of the glass, pulling out the defective bottles.

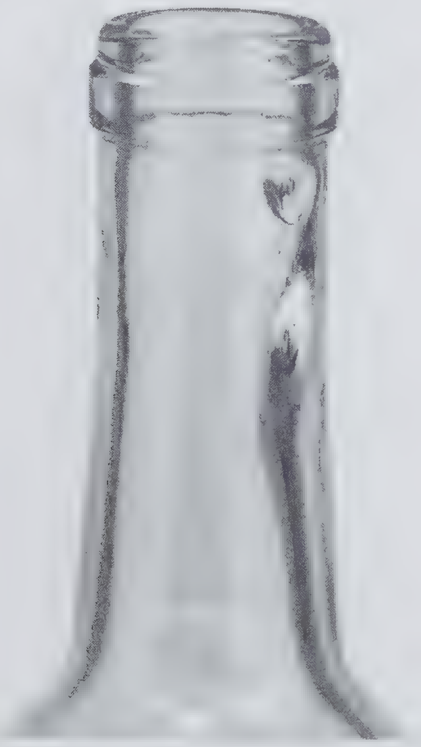


Figure VI. Sticky plunger — glass inside finish of the bottle that is usually caused by the plunger being too hot in glass-forming stage. A critical defect.

Grape Growing and Soil Fertility

Question: Is it possible to increase drought resistance for grapes grown on my land while also increasing soil fertility? (Continued from the May–June, 2004 ***PWV***, page 39).

Answer: Calcium improves the uptake of every other nutrient, including those that build better root systems, for grapevines and all other plants. Providing needed calcium can only be sufficiently accomplished by first measuring and determining the exact need as a percent of total nutrients. With this done, the deficiency can then be accurately expressed in terms of pounds per acre.

Calcium must be present in the soil for root elongation. Without sufficient calcium, roots will stop growing. Furthermore, adequate calcium must be supplied to the soil in the specifically required amounts needed (60% saturation in the soil solution surrounding the root hairs) for optimum root development. This is not necessarily accomplished just because a soil has a good or even an extremely high pH level.

Soils can have a good to high pH and still be lacking in calcium, because the presence of too much sodium, magnesium, and/or potassium can also unduly influence the soil pH. If the pH is good, but calcium is lacking due to an excess of any one of these other three elements, the vines will suffer to the extent calcium is not being properly supplied to the soil.

It is extremely important that only the amount of calcium shown to be required is applied to each different area of the vineyard, because too much can cause serious deficiencies of other necessary nutrients. In spite of those who speak to the contrary, you can use too much calcium to the detriment of the crop.

Once calcium is properly measured and supplied, care should be taken, especially in lighter, sandier soils, to assure that sufficient magnesium is present. Studies have shown that magnesium in the soil actually helps to attract and hold more water. Soils that are low in magnesium will dry out more quickly. Soils with too much magnesium will retain too much water, depriving it of a sufficient amount of needed air.

Getting the magnesium right requires the use of a specific set of tests that are necessary to measure both the actual magnesium present in the soil, and the amount of magnesium needed, in order to identify and help determine how to accurately correct this situation. This is extremely important, because a magnesium deficiency in the soil will cause a deficiency in grapes, but an excess of magnesium in the soil will also cause grapes to be deficient in magnesium.

Needed recommendations for all these various elements can and should be determined by a detailed soil analysis designed to specifically focus proper interpretation on an accurately measured need. It involves the use of a specific type of soil analysis and, from that analysis, determining how to perform the correct set of calculations that will define the actual need for each individual soil.

The program recommended here is not secret information. Each year we teach clients, both growers and consultants, who want to learn and understand these calculations based on the soil tests we use, exactly how this is accomplished.

Building the correct fertility, just like providing the correct climate, is an extremely important key for growing better grapes. If you feel this program may have long-term merit for your vines, or other plantings, please feel free to contact our office in this regard. We would be pleased to help.

Answers provided by Neal Kinsey, author of *Neal Kinsey's Hands-On Agronomy*, and owner of Kinsey Agricultural Services, specializing in building excellent soil fertility in order to provide top quality soil for plant growth since 1973.

Kinsey Agricultural Services, Inc.
297 COUNTY HWY 357 · CHARLESTON, MISSOURI 63834
PHONE: 573-683-3880 · FAX: 573-683-6227
E-MAIL: neal@kinseyag.com · WEB SITE: www.kinseyag.com

Some people believe that trying to do continuous human inspection on a high-speed bottling line is an exercise in futility and may unwittingly provide the winery with a false sense of security; however, at BBWE, inspectors have found enough defects to justify their use. Just remember that glass inspection is deadly boring, and fatigue sets in quickly. Fatigued and/or unmotivated inspectors are useless, so give them a break by rotating the position often.

Reacting to defective glass

When defective glass is found, BBWE inspectors sound a buzzer

OakPLUS

Quality OakPLUS wine chips provide oak character to wines at low cost. The use of these highly regarded oak chips during fermentation or aging will enhance any wine's flavor and texture. OakPLUS oak chips are proven to save money. Addition rates are one half the rate of any other chip product, which means that each gram, pound or kilo of OakPLUS will flavor more wine.
At Innerstave, aged and air-dried oak is carefully selected for production. Attention to detail and precise toasting by Innerstave yield noteworthy flavors that winemakers can use to shape the taste of their wines.
Add some magic to your wines with Innerstave's OakPLUS.

Send for our products brochure or call Scott Gill for more information.

INNERSTAVE®
Shaping the tastes of fine wine

24200 Arnold Drive • Sonoma, California 95476
toll-free: 888.996.8781 • *telephone:* 707.996.8781
fax: 707.996.1157 • *e-mail:* sales@innerstave.com
or visit our web site: innerstave.com

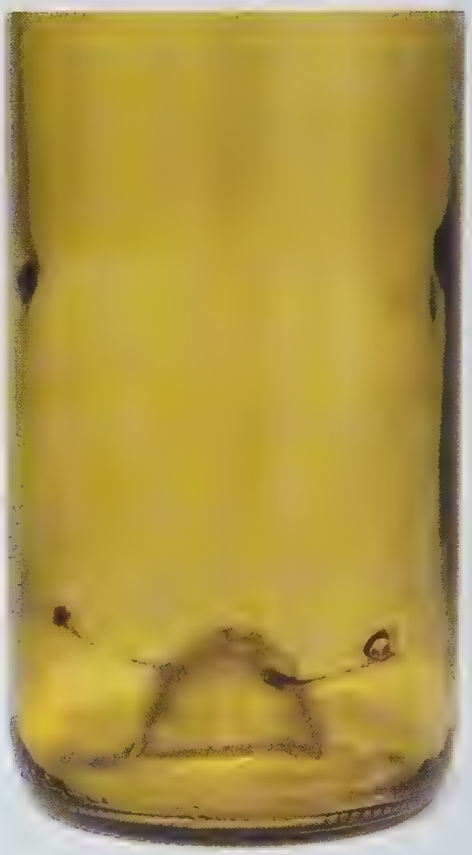


Figure VII. Punt swing — glass on inside of bottle stretching from side of the bottle to the punt. A bird swing is similar but goes from one side of bottle to the other side. Always a critical defect.

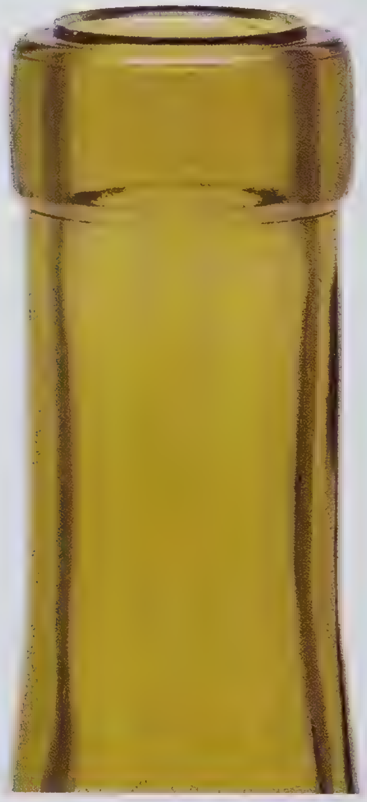


Figure VIII. Overpress finish — glass protruding from top of the finish of the bottle. A critical defect since broken glass can end up inside bottle when driving the cork.

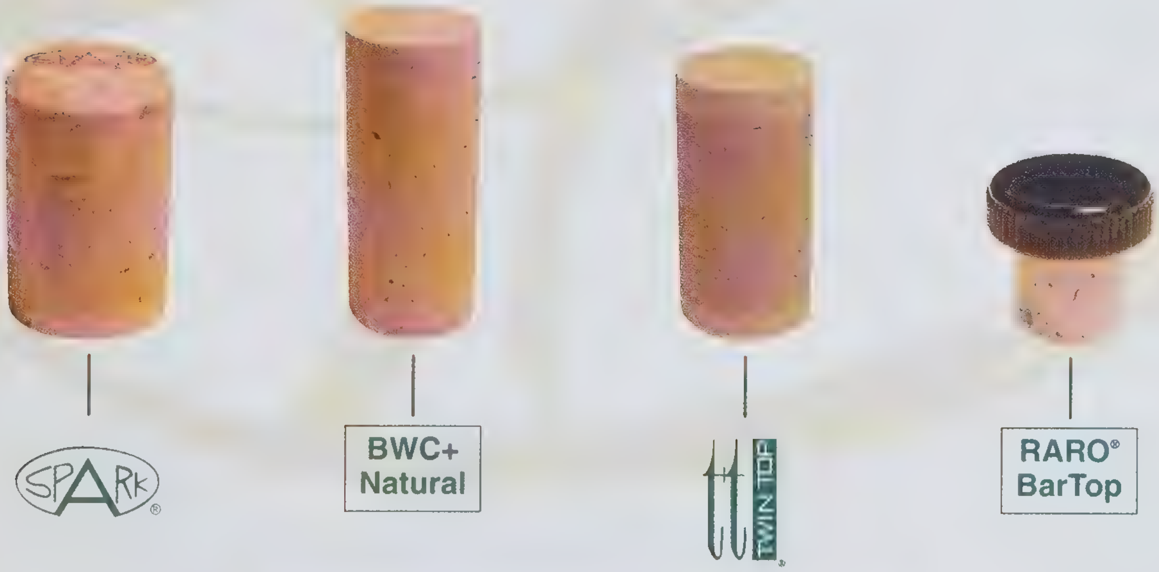
Amorim Cork America

We're Amorim Cork America, a North American subsidiary of the Amorim Group, the world's largest and finest producer of quality natural cork closures.

Amorim is:

- **The World Leader:**
  3.5 Billion corks sold internationally last year
- **A Vertically Integrated Company:**
  Quality controlled from bark to bottle
- **A Strong Global Presence:**
  Subsidiaries in 37 Countries
- **The Most Technologically Advanced:**
  Over $6 Million spent in R&D annually

We're global. We're local. We're here to serve you.



AMORIM

Telephone: 707.224.6000
fax: 707.224.7616

email: info@amorimcorkamerica.com

2557 Napa Valley Corporate Drive #A

linked from the light plate to the QA lab. We don't want the inspector leaving the light station at the same time questionable glass is being found. The buzzer alerts the QA personnel to come out to the line, evaluate the severity of the problem, and determine the appropriate course of action.

At Chateau Souverain, we generally keep bottling, but depending on the layout of your bottling line and how many empty bottles you have on the line, you may find it easier to stop bottling until you have the defective glass isolated.

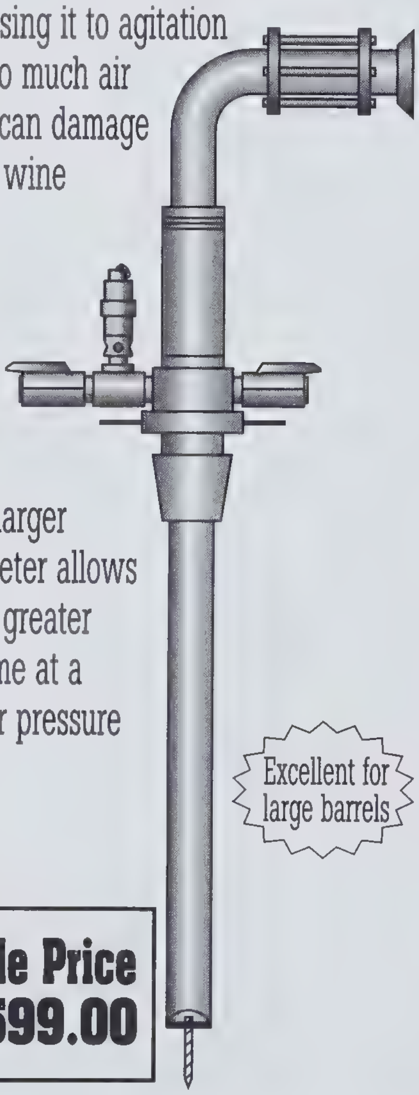
Process for isolating defects

1. Identify and classify the defect. Set aside all bottles filled during the time period when the defect was found for inspection by the glass company.
2. Identify when the bottle was made by checking glass production tags and the UV bottle code showing the production date and time.
3. Stop using the glass made at the same time the defective glass was produced. Have a forklift driver help separate pallets of questionable glass.
4. Contact the glass supplier's representative. He or she should come to the winery promptly and make sure you have identified the defect correctly and have isolated the proper empty glass.
5. Based on agreements already made with your glass supplier, negotiate with the representative to determine how both the empty and filled product will be handled.

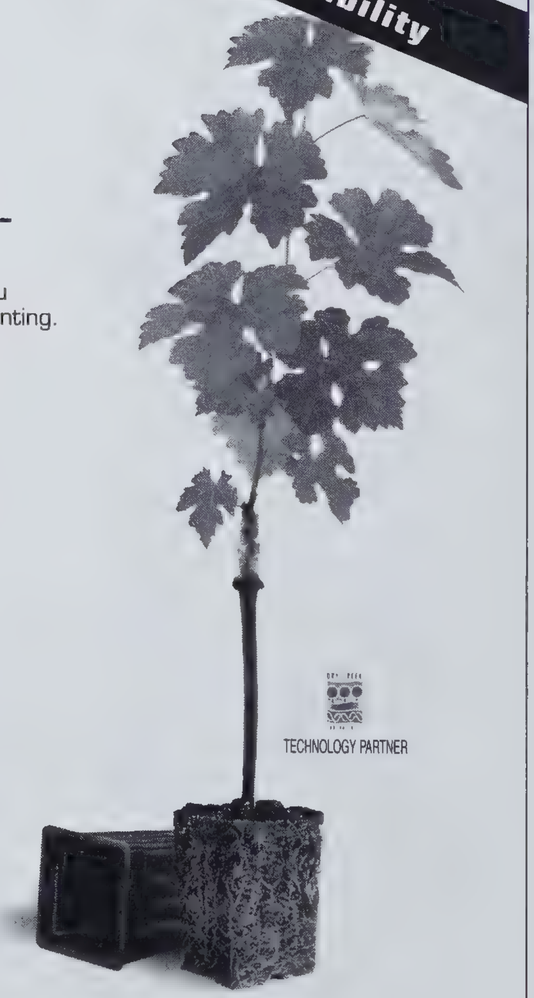
Final points

When there are problems, utilize the services of your glass company's technical service representatives, but try not to kill the messengers. They are your liaison between your winery and the glass plant. Don't make them uncomfortable about coming back to your winery. Do

Cuesta Equipment
Full Line Distributors of Wine Fittings & Accessories
The Jumbo Giant
New & Improved (1¼")
The new jumbo can move wine 60% faster
Moves wine gently, without exposing it to agitation or too much air that can damage your wine
The larger diameter allows for a greater volume at a lower pressure
Excellent for large barrels
Sale Price $599.00
For more information or to place an order, call
800-549-9000
Sold exclusively by Cuesta Equipment



call for availability
Big Pot Benchgrafts
the best option for your vineyard–
Performance
Compare the growth of our Big Pots to any competing vine and notice the difference.
Flexibility
Enjoy the flexibility of year round planting.
Duarte Nursery, the best option for you–
Service
The best vineyard service team will meet you at your vineyard before, during and after planting. Call us at 209-531-0351 to arrange and appointment with the Duarte Viticultural Consultant for your area.
Value
Your vines arrive pre-sorted and we offer free shipping to most grape growing areas. Guaranteed stand.
At Duarte Nursery we measure our success by your success.
DUARTE NURSERY INC.
TECHNOLOGY PARTNER



expect them to come up with prompt answers to your questions and to help develop action plans to deal with difficulties.

Realize that the glass plant has a learning curve when producing custom bottles. Cartouches (embossed designs), fancy finishes, and square bottles may look wonderful, but keep in mind that you are asking for production problems anytime you introduce a sharp angle on a glass bottle.

Work with your glass companies to overcome design flaws and try to be flexible with your bottle design. Major problems can often be overcome with very small design changes. The main point here is to provide constant feedback to the glass companies to help them make better glass for all of us. We'll get a higher quality product, and they'll become more competitive in their own market. ■

EXPERTISE THROUGH EXPERIENCE

HOYT SHEPSTON, INC.

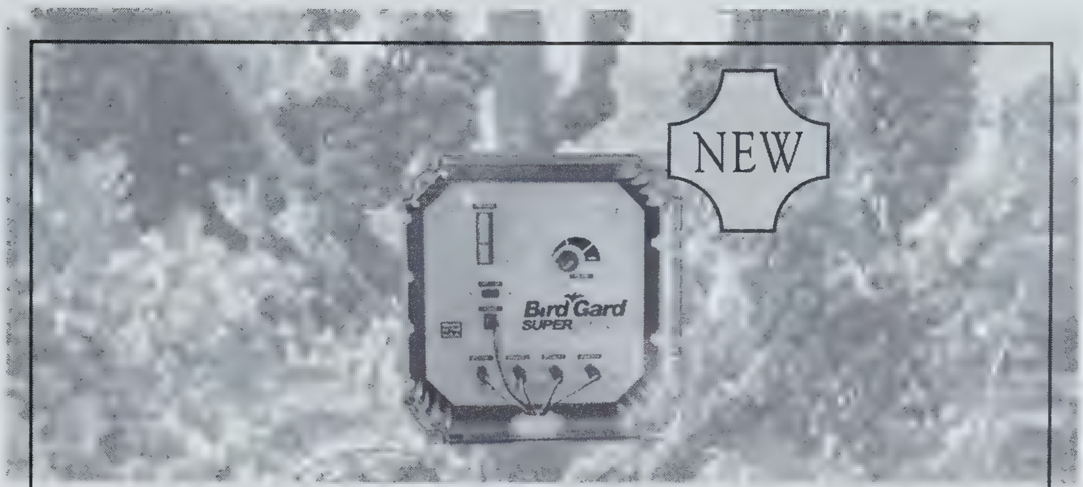
CUSTOMHOUSE BROKERS

Ocean & Air International Freight Forwarders

Serving your Import - Export Needs

700A Dubuque Avenue
South San Francisco, CA 94080

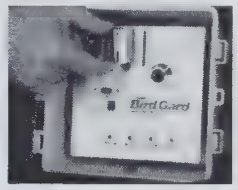
(650) 952-6930
Fax: (650) 952-5691



ANNOUNCING THE
BIRD GARD SUPER PRO II.

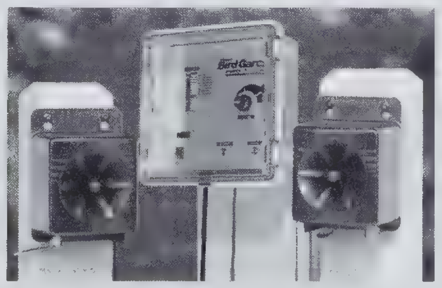
"The new Super PRO II continued being effective long after the birds habituated to the old Super PRO. I also like the sound jumping from speaker to speaker. It really kept the birds moving"— Valley Farm Mgt., Soledad, CA.

The Super PRO II has distress calls that randomly change in frequency, duration, and individual speaker sequencing. That means the calls coming from one speaker at a time create the illusion injured birds are scattered throughout the vineyard. And each species call is electronically modified creating the illusion more than one bird of that species is injured. (NOTE: The Super PRO II's chip is in front so it can be easily replaced for new chip updates.)

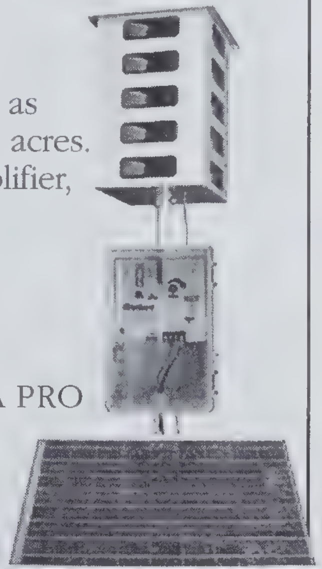


Distress calls and harassment sounds can be as effective as netting. The Super PRO II Combo is like having two different bird repellers in one. Some vineyards that have netted, now net less and use the Bird Gard Combo unit in combination. The Bird Gard Super PRO II Combo has 5 different distress calls, a cooper's hawk alert call, and a harassment sound from the Crop Gard. The Crop Gard sounds have been proven to be effective with problem birds like linnets, resident robins, cedar waxwings, large flocks of starlings, doves, and mocking birds. Program any combination you wish. It's like having two different bird repellers in one.

The Mega PRO has 120 decibels of output and covers up to 40 acres. It's 60 times as powerful as the Bird Gard Super PRO II that covers up to 6 acres. Included with the Mega PRO is a 200 watt amplifier, a 20 speaker tower, and a 40 watt solar panel. List:$3000. **Our price:$2200** plus shipping.

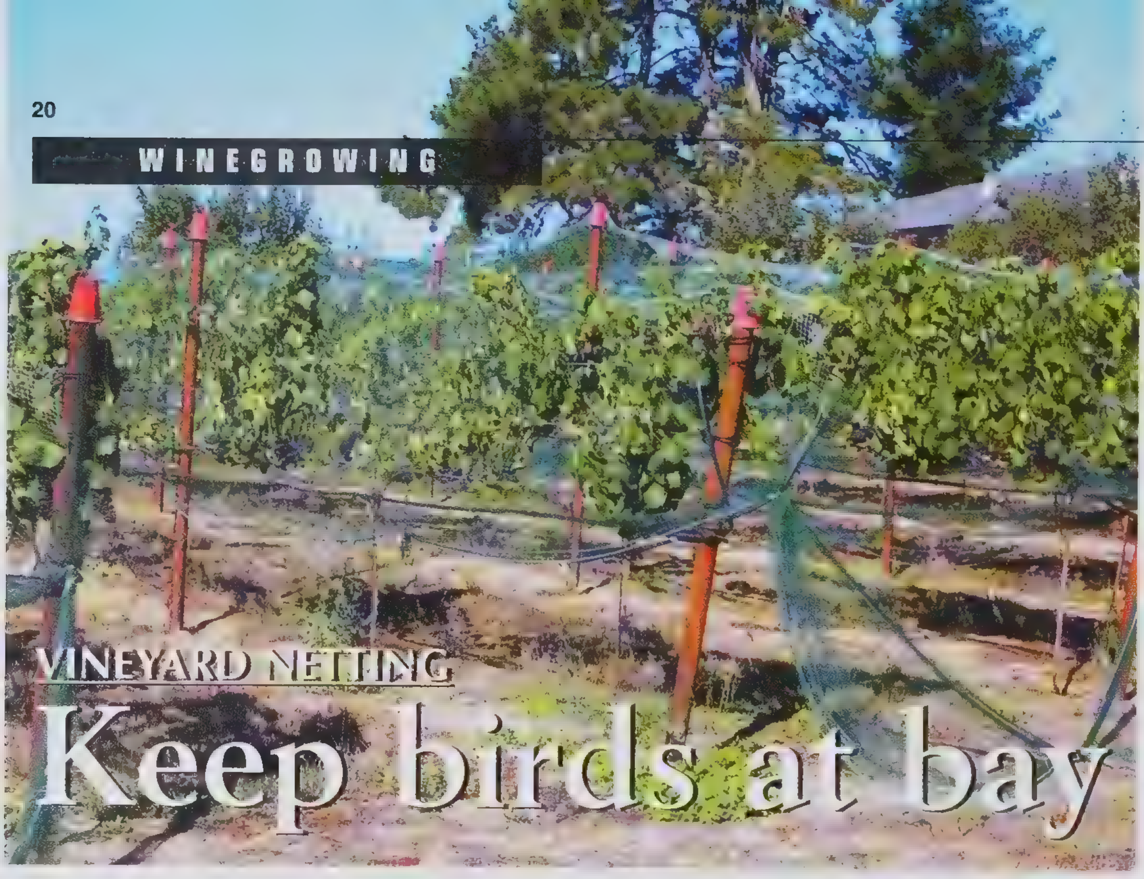


Bird Gard PRO Plus Combo: $300
Covers up to 3 acres with 2 speakers each with 100 ft of cable.



MEGA PRO

BirdGardPRO®
JWB Marketing LLC
www.birddamage.com
Or call 800.555.9634



VINEYARD NETTING

Keep birds at bay

Knitted netting—note net on the ground, and post protectors.
Photos by Paul Michalczyk

BY Paul Michalczyk,
Hawk Hill Vineyard, Sebastopol, CA

Vineyards in Northern California host a remarkable array of birds: western bluebirds, swallows, titmice, chickadees, nuthatches, finches, wrens, flycatchers, starlings, robins, woodpeckers, blackbirds, orioles, blue jays, turkeys, and about 250 other species. The one thing they all seem to have in common is their appetite for grapes!

Some of these birds are interested in grapes, while others peck away at the berries to eat the seeds. Either way, they can be a serious problem. Even what they don't consume is often damaged by the juice that runs out of the partially eaten cluster, attracting insects, such as ants and yellow jackets, and causing sooty mold.

The economic loss caused by birds varies widely among growers, depending on many factors. But in these economic times, it is useful to think about deterrence methods and costs, so you can decide if control is necessary for your vineyard.

If you are so frustrated with birds eating your grapes that you're thinking of buying a shotgun, consider the legal ramifications. Nearly all of the birds depredating vineyards are covered under the Federal Migratory Bird Treaty Act. Two common exceptions are English sparrows and starlings. Further, the California Department of Fish & Game (and the fish and game departments in most, if not all, other states) also claim jurisdiction over "non-game" birds.

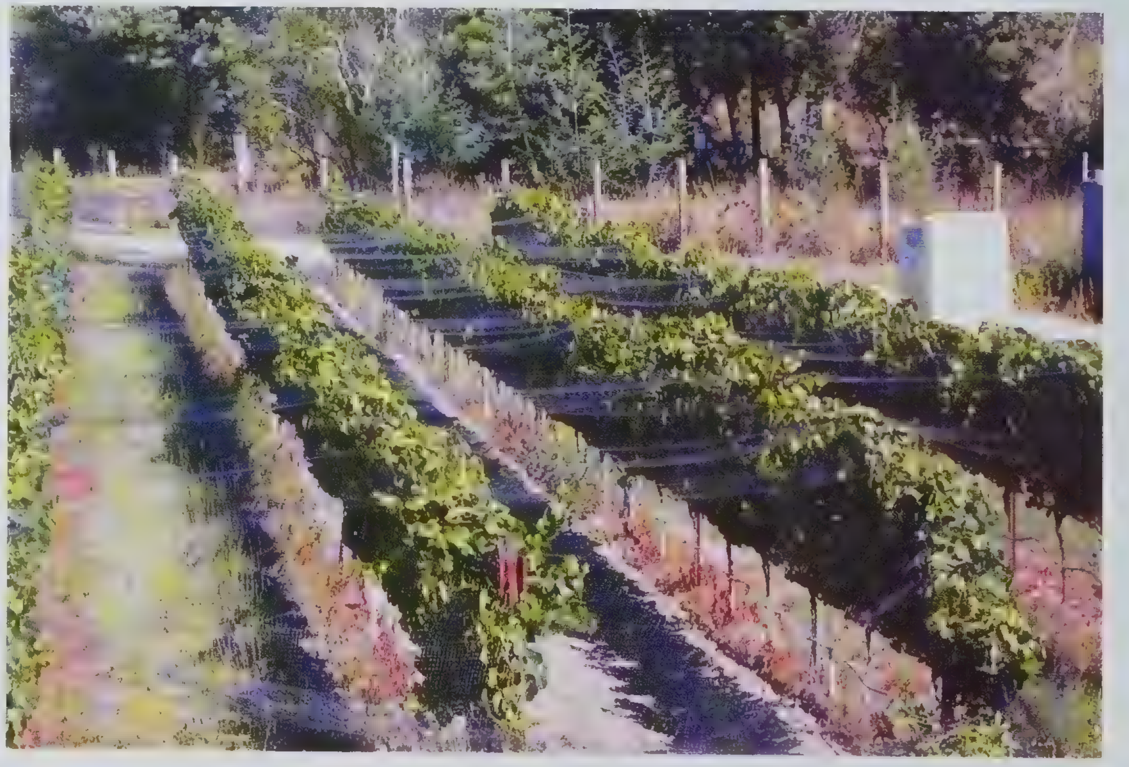
The Migratory Bird Treaty Act generally prohibits the "taking or possessing of a migratory non-game bird." "Taking" means hunting, pursuing, catching, capturing, killing, or attempting to do so.

Though the law leaves a substantial gray area in cases of incidental or accidental injury or harassment, it is probably a good idea, given the increased scrutiny of vineyard operations, to check with local, state, and federal officials regarding bird suppression activities that are outside the industry norm. (See Title 50 of the Code of Federal Regulations and your state's fish and game regulations. Both are available online.)

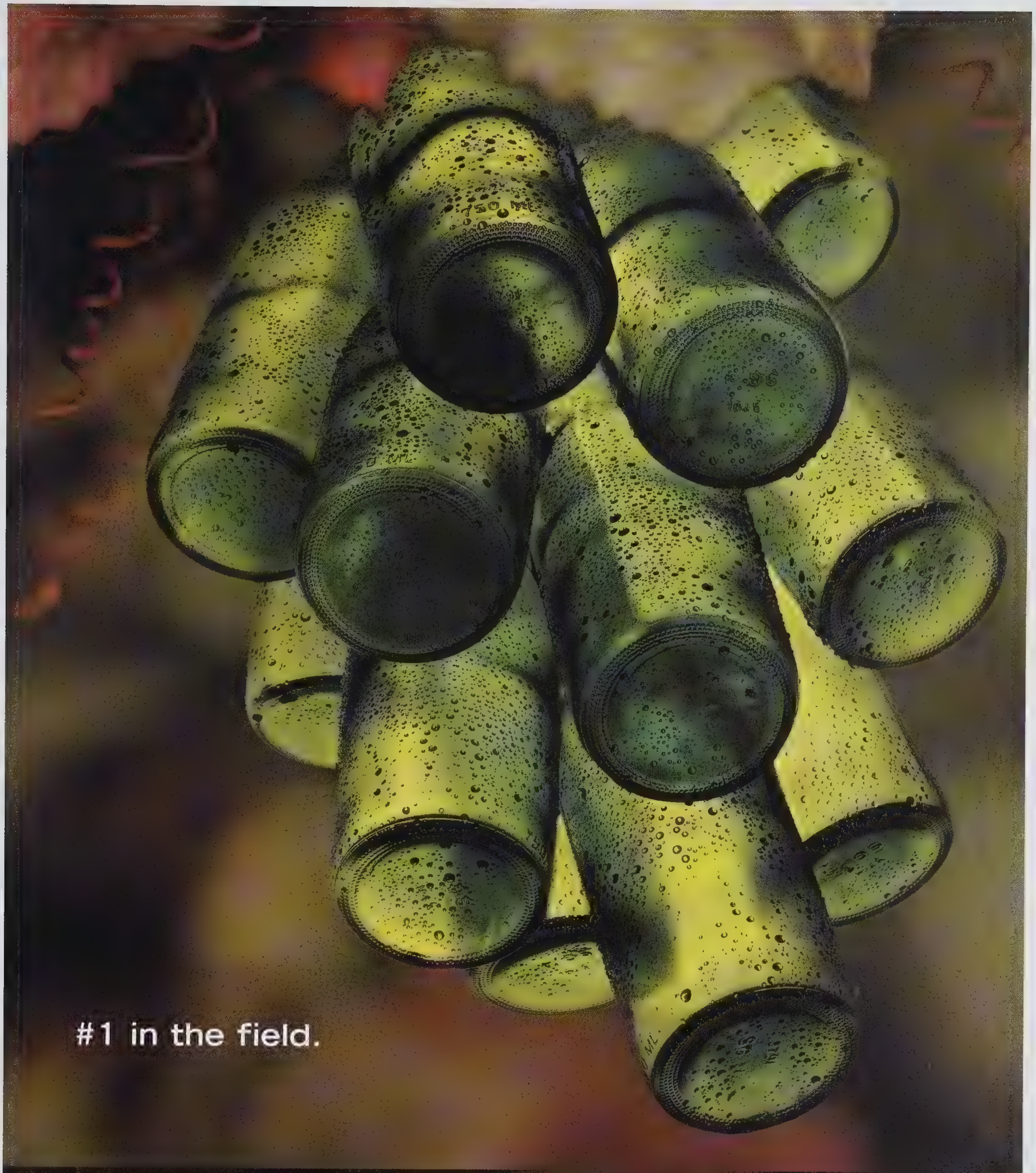
An obvious — and critical — question to ask yourself is: What is the extent of your problem? The worst problems occur in areas where different varieties of food are available throughout the year. For example, if your vineyard is adjacent to a field where hay or grain is grown or near a large riparian area, you are bound to have problems, since these areas provide abundant alternative food supply and good habitat for birds.

In my area, vineyards located between large oat-hay fields and thousands of acres of wetlands adjacent to San Francisco Bay have truly astonishing bird pressure.

Grape variety is a factor, as birds seem to prefer Pinot Noir and Chardonnay over grapes with naturally occurring higher tannins. So, if your Pinot Noir vineyard is next to your neighbor's Syrah block, you might expect more problems than your neighbor.



Extruded net placed over the top of an entire vineyard.



With a history of packaging innovation and customer attention that spans three centuries and two continents, only nature herself has been serving the wine industry longer than Saint-Gobain—the #1 designer and producer of bottles for American vintners.

So after you've put your best into a product, shouldn't you put your product into the best?

www.sgcontainers.com 1-800-428-8642

SAINT-GOBAIN
CONTAINERS

© 2003 Saint-Gobain Corporation

The best solution? Pressure versus expense

Control methods vary; you must evaluate the expense of your loss versus the cost to control it. If your bird pressure is low, reflective mylar tape (twisted and suspended lengthwise over the canopy) or the various bird distress calls may provide a reasonable level of fruit protection.

On the other hand, a grower may suffer unnecessary, substantial crop losses because he/she decides a solution is too expensive or impractical or may spend incredible sums of money on the latest fad-solution just because he heard some particular method of control was **the** answer.

Sometimes control has been ineffective because of poor timing or methodology. As with most things, the really effective methods may be expensive but doing nothing may be even more costly.

Assessing the problem

Begin your control assessment by ensuring that your problem is with birds, not other wildlife. Foxes, coyotes, raccoons, skunks, and even family pets all seem to find ripe grapes irresistible.

Keep in mind that not only are there many different bird species, but there are distinctly different populations of the same species. The resident population is the few birds of each species that are always in the area. (Note that an "area" may be a few acres, or a great many acres, depending on food sources and other factors.)

Each species also has a migratory population that travels from area to area in search of food. You may see relatively few finches throughout the season, for example, but when conditions are right, there will suddenly be huge numbers.

Also, give special consideration to those areas near trees, telephone wires, and fence lines. These are ideal spots for birds to roost, hence adjacent areas generally suffer the most damage.

Population densities of different bird species that inhabit vineyards are affected by many things. Was it a wet winter, providing an abundant food supply, leading to an abnormally large hatch? Or was it so cold and wet that it disrupted the breeding cycle, leading to a smaller population than normal?

A big population last year may mean more predators this year, with a concurrent reduction in bird pressure. Careful observation throughout the year, particularly in the spring, can give you some clues on what to expect at harvest. Look for increased activity — such as nest building and larger flocks — and increases in predators, such as feral cats, foxes, and kestrels.

As you consider different types of bird control, remember that you cannot totally exclude birds from your vineyard, as long as there are any available food sources. Since you are not permitted to kill or harm them in any way, the best you can hope to do is to get them to leave your grapes alone in favor of more easily obtained food sources.

ETS LABORATORIES®
St. Helena, CA
McMinnville, OR
Telephone 707•963•4806
info@etslabs.com

Visit www.etslabs.com to learn more about:

- **Harvest Analysis**
  Panel of analyses for harvest and fermentation
- **Real Time PCR Anaysis**
  New detection capabilities for spoilage organisms
- **Brettanomyces**
  GC/MS analysis at trace levels of 4-ethylphenol and 4-ethylguaiacol
- **Red Wine Phenolics**
  HPLC profile based on time-proven quantitative ETS analysis

A2LA International Standard ISO 17025
Accredited Quality System
Certificate Number 1257-01

O'SULLIVAN COATINGS

Superior Food-Grade Coatings For Wineries & Vineyards

Coatings for:
- Barrels
- Floors
- Gondolas
- Bottling Lines
- All Winery Equipment

Exclusive Agents
Pickering Winery Supply
888 Post Street San Francisco, CA 94109
(415) 474-1588

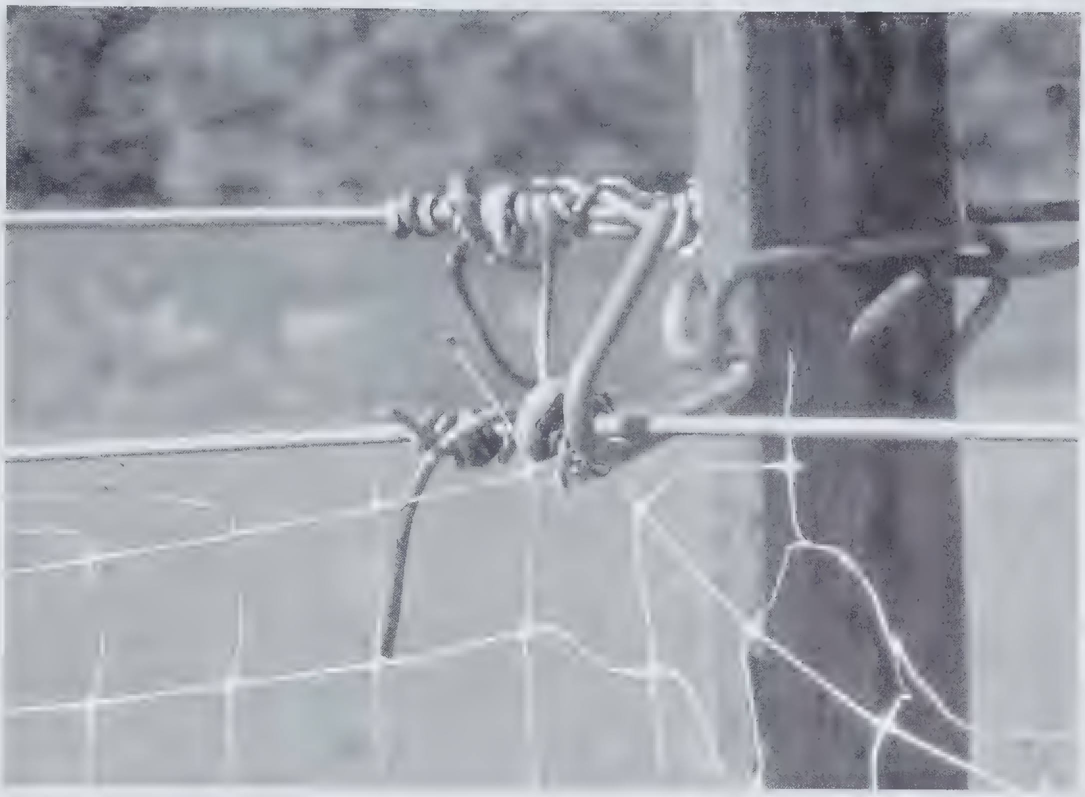
Netting basics

I decided eight years ago that netting is the best choice for my 14-acre vineyard near Sebastopol in Sonoma County, CA. If you decide to net, you must next decide what type of netting, how to apply it, and how to retrieve it.

These decisions will be based on the type of trellising (vertical or horizontally divided), harvest considerations (hand-picked or machine), timing (how soon you should apply and remove it), and resources available (it is possible for one person to do it, but easier with one or more helpers).

With a few variations, there are two basic types of available netting. One is made of a knitted material. It is only available in one width (17 feet), but two different weights — one guaranteed for five years, the other for 10 years.

The other type, made from an extruded material, is available in three widths and three weights. The lightweight is rated to last one to three



40-inch net attached to T-post.

KDL®
(POTASSIUM DEXTRO-LAC®)

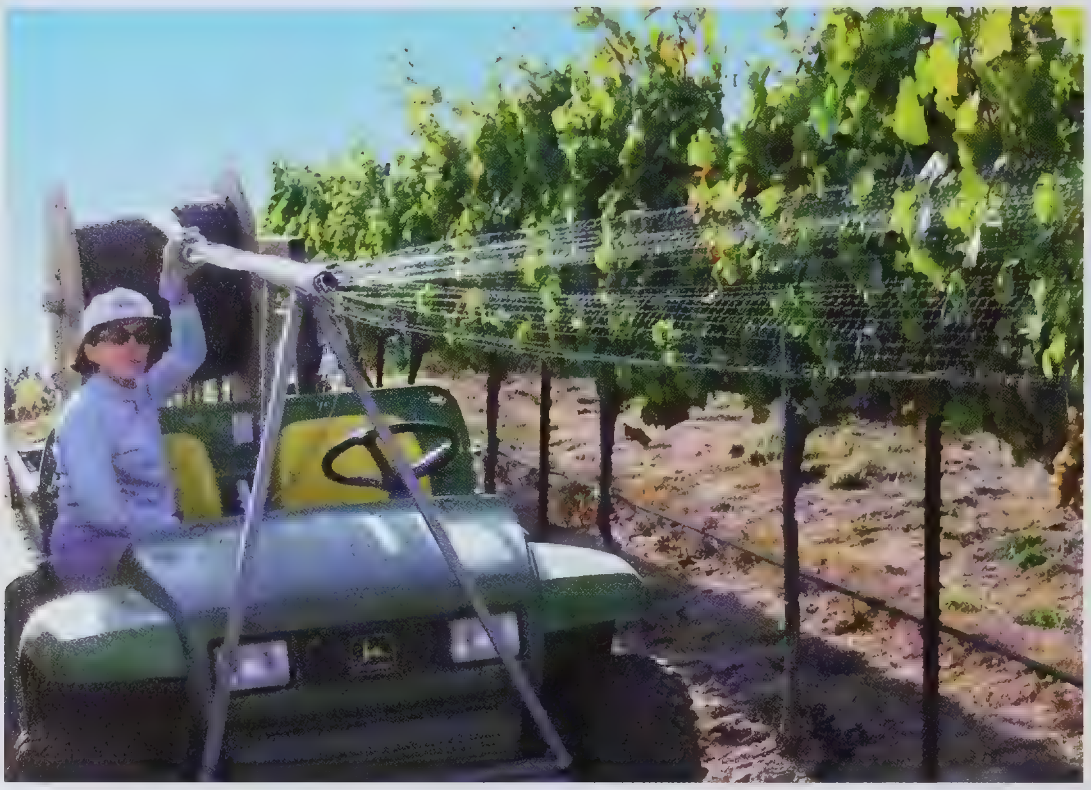
Helping
Nature
Work℠

Improves Grape Maturation and Wine Quality!

KDL® has a proven field record showing it promotes uniform grape maturation and statistically replicated data showing it increases wine color density and phenolic levels. KDL® – designed for vineyard managers … loved by quality winemakers.

Agro-K Corporation
8030 Main Street, NE
Minneapolis, MN 55432
800-328-2418
www.agro-k.com

AGRO·K®



Retrieving the net with self-constructed machine.

years and is available in 17-ft. and 20-ft. widths. The medium is available in 14-ft. and 17-ft. widths and is rated to last three to five years. The heavy-duty, with up to a 10-year lifespan, is also available in 14-ft. and 17-ft. widths.

Longevity of both types is based on several factors. Both are subject to damage by careless application and removal, although the knitted material is physically much stronger. Both are subject to damage from prolonged exposure to the sun and the elements, but the knitted type material is less susceptible to degradation. Actually, exposure is the controlling factor for netting longevity. The shorter the time it is on the vines, the longer it will last.

Deciding which width you need is simple. Generally speaking, for a vertical trellis, the 14-ft. width is sufficient. This will provide enough material to go from the drip line, over the top of the canopy, and down to the drip line

For us, some secrets are worth sharing
"Barrique Bordelaise Château"

BOUTES

U.S. Sales Manager
Manny Martinez
T : (510) 799-1518
F : (510) 799-1557
boutesusa@aol.com

Recipe for a *Super-Cooled Liquid*

Ingredients:

1 part ***Soda Ash***

3 parts ***Silica Sand***

2 parts ***Limestone*** (fresh)

20-40% ***Cullet*** (recycled glass)

Just a pinch of ***Copper Sulphate*** for color

Trace Elements - Carbon, Chromite, Iron, adding a little ***Cobalt*** to make it a darker UV champagne green

Mixing instructions:

Bake in 25,000 lb. batches at 2400° F, mixing occasionally, until really runny.

Extrude molten glass into mold, cool and enjoy!

**Or,
simply come to us.**

CALIFORNIA GLASS COMPANY
155 98th Avenue, Oakland, CA 94603
(510) 635-7700 Fax (510) 638-7624

PACIFIC COAST CONTAINER, INC.
11010 N.E. 37th Circle, Unit 110
Vancouver, WA 98682
(360) 892-3451 (800) 326-8971
Fax (360) 892-4955

In Colorado call (303) 485-2498
Fax (303) 485-5206

The Ultimate Package™
www.calglass-pcc.com

Bottles/Corks/Capsules/Closures/Screening/Adhesives/Cartons. Yeah, we pretty much have it all.

where the two sides are fastened together beneath the fruiting zone.

For a split canopy, the 17-ft. wide material will provide the same coverage. The knitted material is only available in 17-ft. width. This means that there is generally enough material to go from the ground over the top of the canopy of a standard vertical system and back down to the ground on the other side. It also means you may need less installation time, since the net may not have to be fastened at the bottom.

Note: To determine how much netting is needed, divide the total number of square feet in your vineyard (one acre equals 43,560 ft.) by the row spacing. If you have 15 acres with 10-ft. spacing between vine rows, you will need 65,400 feet of netting (15 X 43,560 / 10).

I recommend adding about 15 or 20 feet per row of extra material for several reasons: to make sure the netting isn't stretched too tightly on subsequent applications, to provide for shrinkage of the extruded type, or to provide enough material to go between the rows if you are using the knitted netting.

Knitted material

The knitted material comes in a heavy cloth bag, which contains either 2,640 feet of lightweight material or 1,320 feet of heavyweight material. The lightweight material costs $395 per bag, the heavyweight material is $365 per bag. For 10-ft.-wide tractor row spacing, 3.3 bags per acre of heavy-duty netting are required at a cost of $1,304 per acre. Because there is more lightweight material per bag, only 1.7 bags are needed at a cost of $620 per acre.

The cost difference disappears, however, if you consider that the heavy-duty material will last at least twice as long (10 years) as the lightweight material (five years). The annualized cost for heavy-duty material then becomes $130 per acre per year. For the lightweight material, the annual cost is $124 per acre per year.

For tractor row spacing other than 10 feet wide, increase or decrease the cost by 12% per foot. For example, costs would increase to $146 and $139 respectively if you have nine-foot spacing, because there are more rows per acre.

In addition, you'll need an applicator that is available from a vendor at a cost of $1,000. This applicator consists of a platform, a metal framework that holds the bag open, and an arm that extends over the canopy and dispenses the netting. For retrieval, an operator stands on the platform, pulls the netting through the overhead arm, and stuffs it into the bag.

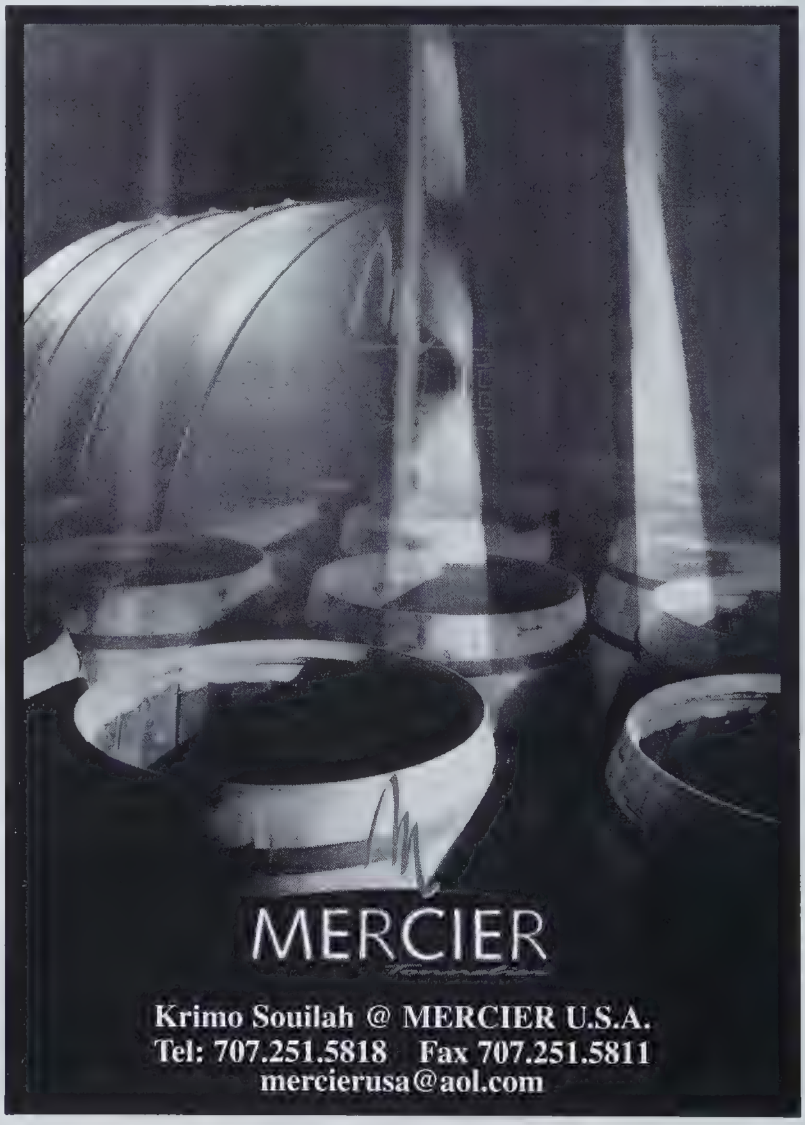
It's a very simple mechanical system with no moving parts and nothing to go wrong. On the negative side, operator fatigue may be a problem, since the retrieving person has to handle thousands of feet of net per acre. Also, the netting is heavy and will

LALVIN®

MALOLACTIC BACTERIA CULTURES

The result of extensive research and development, LALVIN MBR "*Microbes Be Ready*" CULTURES are produced to the highest standards. It's not surprising that the finest wines are made with the finest ingredients!

DISTRIBUTED BY
SCOTT LABORATORIES
2220 Pine View Way, P.O. Box 4559, Petaluma, CA 94599-4559
(707) 765-6666 · 1 800 821-7254
950 Brock Rd., South, Unit 1, Pickering, Ontario, Canada L1W 2A1
(905) 839-9463 · 1 800 RX SCOTT



MERCIER
Krimo Souilah @ MERCIER U.S.A.
Tel: 707.251.5818 Fax 707.251.5811
mercierusa@aol.com

frequently become tangled in the canopy, adding to the removal effort.

Cost of the material to net an acre of grapes (10-ft. tractor row spacing) is between $124 and $130, but that is only part of the total cost. There is also the cost of labor to apply and remove the netting. The vendor of the knitted material states that three men can generally apply or remove about five acres of netting per day based on 10-ft. tractor row spacing, but this may vary depending on row length and other factors.

Based on labor costs of $15 per hour for the tractor driver, $10 per hour for each of the two laborers, and $5 per hour as the out-of-pocket expense for tractor fuel and maintenance, the hard cost of application or removal is $40 per hour, or $320 per day. Therefore, the cost to apply the knitted material is $64 per acre and another $64 per acre to remove it.

There are some additional costs. Protectors must be placed on top of the trellising support posts. These may range from simple items, such as plastic cups, which must be replaced annually, to custom-made protectors, which are more difficult and costly to install but last indefinitely. Additionally, if you're in a windy area, it may be necessary to secure the bottom of the netting, lest it be blown away.

One disadvantage of this type of netting is its availability only in relatively short lengths. For example, vine rows in my Pinot Noir block are 1,200 feet long. This is not an even multiple for either the medium or heavy netting. It requires the netting panels to be joined together and installed as a continuous run, resulting in netting being placed on the ground at the end of vine rows. This is disadvantageous, because it can be damaged when driven over and walked on in the course of ordinary viticultural practices.

Complete, annualized cost to net with a knitted material is between $260 and $350 per acre per year, considering the advertised useful life of the netting.

Extruded netting

Extruded netting is supplied on custom plastic spools for application and retrieval with a specially constructed machine that attaches to a tractor's three-point system. Cost for the netting varies between $600 and $1,100 per acre, depending on width and material weight.

Because this material is much more affected by environmental conditions, such as sunlight, air, and chemicals, the manufacturer states that the material will last between one year (for light-duty material left exposed for three or four months) to 10 years (for heavy-duty material used for the few critical weeks when bird pressure is the highest).

Taking the midpoint of both these ranges, the initial application should cost about $200 per acre annually for the material. Subsequently, this cost should decrease to about $125 per acre per year after the original acquisition of the spool cores, which allows you to buy subsequent netting in bulk.

HOUSE
Manufacturing Company, Inc.

"The Most Technologically Advanced Floating Brush Aerator on the Market Today"

HEADQUARTERS
3720 Highway 1 ~ P.O. Box 117
Cherry Valley, AR 72324
1-800-327-8299
FAX (870) 588-3517
email: info@housemfg.com

Authorized Representative
Ryan Process, Inc.
866 Podva Road
Danville, CA 94526
(925) 837-4832
FAX (925) 837-0670

Constant innovations since 1985 make House Aerators high production work horses with low maintenance requirements. We offer TGIC Powder-coated units as well as galvanized and stainless steel units.

www.housemfg.com

Available in 2, 3, 5, 7.5, 10, 15, 20 and 25-HP Models.

The specialized machine to install and retrieve the netting costs $9,500, plus tax and freight. However, a Sonoma County vendor has rental machines available for $325 per day. Installation and retrieval are limited to the walking speed of the "helpers," who ensure the netting is placed equally on both sides of the canopy and secure it at the bottom to prevent bird entry and disturbance by wind.

Because the speed of installation is similar for both netting types, costs are similar, too. In some instances, removal may require only two workers — the tractor operator and a helper to loosen the net at the bottom. Normal circumstances, however, will generally require three workers because shoots and laterals that grow through the netting must be removed.

Using the costs for labor and tractor time we used earlier, installation and retrieval should be about $112 to $128 per acre. Additional costs of $20 per acre for fastening and unfastening the netting at the bottom to preclude bird entry and protection from the trellis supports must also be included. The rental fee of $65 per acre (based on five acres at $325 per day) brings the total, on an annual basis, to just over $400 per acre.

Cost of the two systems is roughly equivalent, and both systems are in widespread use in California's wine country. Your actual cost may vary somewhat from this estimate, depending on environmental conditions, such as prevailing winds and length of time the nets are left in the vineyard.

Sikorsky system

Doubtless other growers have used the Sikorsky system, but Kings Ridge Vineyard, Cazadero, CA, was the first place I saw the following netting protocol. Owner Ron Sikorsky had to find a method of applying and retrieving netting by himself, as outside help was not readily available.

Using a chainsaw, Sikorsky cuts a 14-ft.-wide bulk roll into four pieces, a 17-ft.-wide roll into five pieces. Each piece is slightly more than 40 inches wide, just the perfect width to cover only the fruit zone, the area between the second set of movable wires and the drip wire. In other words, the area that attracts the birds.

Sikorsky initially distributes the netting by placing a bar through the roll and suspending it off the back of an ATV. He ties the free end of the netting to the end post, and it is automatically pulled off the roll and laid on the ground as he drives down the vine row. Two passes have to be made for each row, one for each side, but each pass can be made as fast as you are able to drive.

After the netting is distributed on the ground, it is a simple matter to lift the netting and attach it to the slots in the highway stake or to the hook supporting the wires on the "T" post.

tech(œ)nology

Quality winemaking combines art and science. This is also true of quality wine closures. Sabaté utilizes state-of-the-art technology and over 60 years experience to produce natural corks and cork-based closures designed to preserve the inherent quality of your wines. By listening carefully to our clients'needs and employing aggressive research and development efforts, we are uncovering innovative ways to make our closures even better.

We are committed to technical innovation and to true collaboration.

The fusion of art and science. Good for wine. Good for you.

SABATÉ
USA

902 Enterprise Way, Ste M - Napa, CA 94558 - Ph : (707) 256 2830 - Fax : (707) 256 2831 - www.sabate.com

PRESENTING THE ENTIRE COLLECTION OF SYNTHETIC CORQS CERTIFIED BY THE BRITISH RETAIL CONSORTIUM.

Having been certificated as meeting the BRC/IoP Technical Standard for food packaging, Supreme Corq has measured up to the highest criteria in quality, hygiene and product safety. In fact, Supreme Corq is the only synthetic closure company in the world to receive BRC, ISO 9001:2000 and AIB certifications. SupremeCorqs offer wineries a taint-free, cost-effective closure solution. They preserve the tradition of using a corkscrew, and are easy to reinsert into the bottle. Perhaps that's why SupremeCorqs have gained a high degree of consumer acceptance and are used by more than 1,200 wineries and distillers worldwide.

QA INTERNATIONAL
BRC/IoP TECHNICAL STANDARD FOR PACKAGING
QAICL/US/BRC/002

SUPREMECORQ®
Designed to keep fine wine fine

For more information, call 800-794-4160. Or visit www.supremecorq.com.

At harvest time, the nets are simply lifted out of the way and stuffed into the canopy, providing access for the pickers. One of several methods is employed to retrieve the nets.

For short vine rows, up to about 300 ft., the netting is placed back on the ground. A plastic trash bag is placed in a trash can at the end of the vine row, and the netting is simply dragged to the trash can and placed inside. When full, the trash bag is removed, labeled for future re-installation (because not all vine rows may be the same length), and stored.

Longer nets are retrieved by placing the retrieval bag on a trailer and driving down the vine row while retrieving the net. However, this requires a driver and helper.

While this method is somewhat cumbersome, it does allow a single person to distribute and retrieve nets. I know several other people who utilize this system, which is very cost-effective for small vineyards. Lay-out and retrieval times are similar to the systems described earlier, but cost for the netting is less than half.

However, Sikorsky's system is not practical for vineyards larger than an acre or so, and cannot be used for horizontally split systems (but it works with vertically split systems like Scott Henry).

Michalczyk method

In my own 14-acre vineyard, I decided to borrow the best features from each of the three systems.

For the initial layout, I use the 40-inch-wide panels of extruded netting and distribute it onto the ground from my Gator. Subsequently, my vineyard manager has his crew secure the net to the "T" posts and highway stakes. Care is exercised to ensure that only one web is attached to the trellis supports. This is very important (explained below).

When bird pressure is high or the canopy is thin, the netting is held together at the second set of movable wires with "bread clips." (We are not netting over the top of the canopy, only the fruit zone.) It may only be necessary to fasten the nets at the bottom sporadically, as birds are reluctant to jump from the ground into the fruit zone. (This is dependent on location and environmental conditions.)

Experience has shown that relatively few clips need to be used, except under trees, power lines, and other roosting places. The ends of vine rows, particularly if near trees or power lines, seem to be hardest hit. Windy conditions can blow the net and expose the fruit zone.

The "bread clips" are the same clips used to close the plastic bags on loaves of bread. (They can be obtained from any commercial bakery supply and cost about $25 per 5,000.) The same clips are used at the bottom of the nets.

After a few weeks of exposure to the sun, the clips become quite brittle and break without tearing the net. They appear to eventually degrade, requiring no cleanup after net removal. The clips work much better that plastic spoons, skewers, and other implements I have seen used in other vineyards.

I can very easily distribute the netting for my 14-acre vineyard in one day, working alone. Application of the nets to the trellis poles requires about four man-hours per acre. The limiting factor, as with the commercial systems mentioned earlier, is the walking speed of the workers. Application costs per acre are very nearly the same for all three systems.

The advantage to this system is that any number of workers can apply the netting, all at the same time. This means a large crew can complete netting operations in one or two days, even on large vineyards. Application is not limited by available hardware. This increases flexibility in the use of your workforce and also opens options when application of netting is delayed by cluster or leaf thinning or other cultural practices.

Once the nets are on the vines, I need a way to expeditiously remove them. What I came up with is a much simpler hydraulically-operated, self-contained spooling machine that fits in the back of my vineyard utility vehicle. A small gas engine operates a hydraulic pump, which powers a hydraulic motor to turn a take-up spool. A pressure relief valve

For all your Labeling needs

ABB
LABELS®

- Up to 8 Colors (Process & Spot)
- UV Varnish & Lamination
- Hot & Cold Stamp
- All UV Inks
- *Guaranteed Quality*

888 Call **ABB** **ABB***Labels.com*

allows me to adjust the take-up tension and speed. In practice, the speed control is really used as an "on-off" switch, as I run it as fast as possible.

Because the netting is held in place by one plastic web at each trellis support post, removal is like tearing a piece of paper along a perforation. There is no need to manually remove the netting from the trellis supports, or remove the bread clips. One torn plastic web every 12 to 18 feet is immaterial. What matters, is that retrieval speed is limited to how fast you can drive down the tractor row, not the walking speed of workers who must unfasten or remove the netting.

The retrieval machine is installed in my vineyard utility vehicle, and the faster I drive, the easier the netting is to remove. My wife and I routinely retrieve and store the nets in less than 45 minutes per acre. (This is with 10-ft. wide tractor rows.)

It takes longer to turn around and restart a row than it takes to retrieve the netting on a 400-ft. long vine row! This retrieval speed is particularly important if you are machine harvesting, since the nets must be completely removed before machine harvesting. They can just be lifted out of the way if you are hand harvesting.

Although I constructed my original net retrieval machine myself, several more have been built by commercial machine shops at a cost of approximately $2,750. This cost is substantially less than the commercially produced, more sophisticated tractor-mounted retrieval machine because it lacks the "level wind" mechanism, depending on the driver's helper to perform this task. However, it is much faster and requires fewer operators.

My home-built machine is more expensive than the bagging system used for the knitted netting, but, again, retrieval rates are much higher and operator fatigue (and potential injury) is much lower.

It is possible, although somewhat slower, to remove the netting with only a driver. One user has mounted his retrieval machine on the three-point hitch of his tractor, which has adjustable side-to-side tilt. He is able to make the netting wind evenly on the spool without a helper.

Labor costs of net application with my method are very similar to both the systems described earlier. This is because all three systems depend on the walking speed of field workers who must manually adjust and secure the netting. However, there will be some cost savings because a tractor and its usually higher-paid driver are not required. Labor costs to install are estimated at $50 per acre (including utility vehicle driver at $10 per hour, which is usually less than a tractor operator).

Because this system uses only enough netting to cover the fruit zone,

French & American Oak
FROM SPECIALIZED FAMILY PRODUCERS

BERGER et FILS
The Barrel for Cabernet Sauvignon

Jean-Louis Bossuet
THE MERLOT BARREL

THE BOSWELL COMPANY

FINESSE BURGUNDY BARRELS
TM
MERCUREY
FRANCE
PINOT NOIR • CHARDONNAY • SYRAH

1000 Fourth Street Suite 640 • San Rafael CA 94901 • 415 • 457-3955 • Fax 457-0304
WWW.BOSWELLCOMPANY.COM

netting costs are half, or about $100 per acre per year, based on a three-year life. Although the medium-duty netting is rated for three to five years of use, I have been able to get seven to eight years out of it.

I have subsequently found it more convenient to use the "light duty" netting, and dispose of it after three years or so, because older netting tends to become stiff, abrasive, and generally more difficult to apply.

Retrieval of the net requires about 1½ man-hours per acre, for a cost of $15. Out-of-pocket costs for equipment are limited to gasoline for the spooling machine (about one gal. per five acres) and the cost of fuel for the vineyard utility vehicle. These costs are negligible and are not considered for purposes of this comparison.

Total annualized, out-of-pocket cost for bird netting using this protocol is about $165 per acre. Note that none of the three systems described include initial purchase or amortization of application/retrieval equipment, although they do include rental cost for this equipment.

Summary

Each of the systems described has particular advantages. The knitted material requires the least capital outlay for machinery. It comes with special markings to assist in placing the netting. It is also the most durable and is probably the best-suited for split canopies, such as lyre or GDC systems. However, it is susceptible to shoots continuing to grow through the net, making removal more difficult. The lack of a powered retrieval system is also a disadvantage.

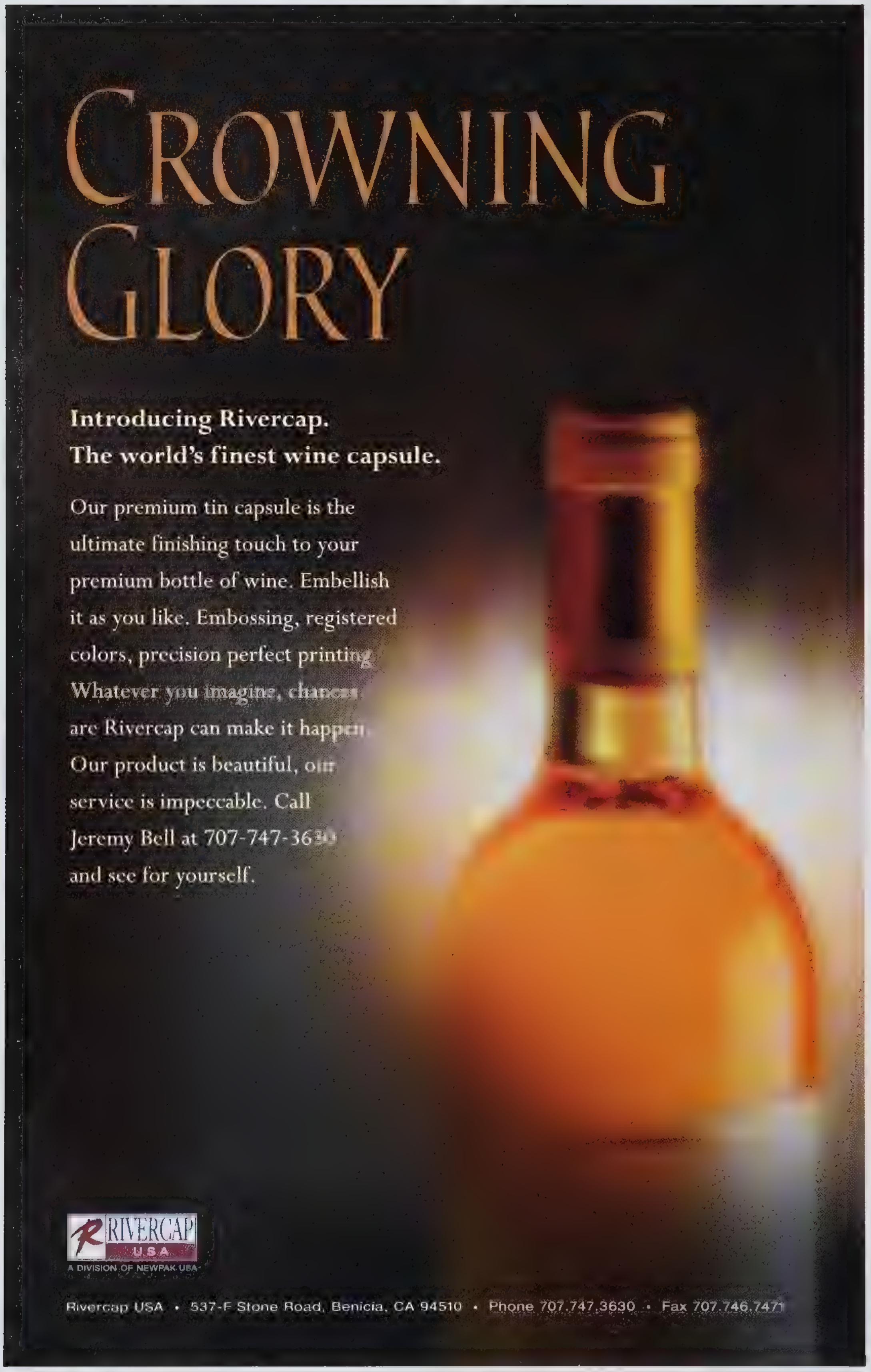
Extruded netting has many of the same advantages for split canopy systems, but has lower initial cost. If rental machinery is used, there is the rental cost and inconvenience of pickup and delivery. Also, machines may not be available when needed. Because of the more delicate nature of this material, it is even more susceptible to damage from shoots growing through the netting.

The Sikorsky system of using smaller panels of netting that just cover the fruit zone can only be used for vertical systems. It is the most convenient system for growers who farm only one or two acres.

With the use of a powered retrieval machine, the system can be used for any size vineyard. Unfortunately, the powered machinery is not currently commercially available, but must be custom-built. Because the net covers only the fruiting zone, it is less affected by growing shoot tips. This means that the net can be applied earlier in the harvest season, which may also lower bird pressure.

For many growers, netting represents the only practical solution to bird depredation. Even in these difficult economic times, it is easy to justify spending $170 to $400 per acre to protect your crop. ■

(The author may be contacted at paulm@tdl.com)



**Introducing Rivercap.
The world's finest wine capsule.**

Our premium tin capsule is the ultimate finishing touch to your premium bottle of wine. Embellish it as you like. Embossing, registered colors, precision perfect printing. Whatever you imagine, chances are Rivercap can make it happen. Our product is beautiful, our service is impeccable. Call Jeremy Bell at 707-747-3630 and see for yourself.

RIVERCAP USA
A DIVISION OF NEWPAK USA

Rivercap USA • 537-F Stone Road, Benicia, CA 94510 • Phone 707.747.3630 • Fax 707.746.7471

CORO MENDOCINO

Zinfandel blends promote wine region

BY Tina Vierra

How do you market a wine region? Wineries of the Mendocino Winegrowers Alliance on the North Coast of California think they've found a way. They formed Consortium Mendocino and launched a regional wine blend they're calling Coro Mendocino.

Marketing a wine blend that is tied to a specific place and made by several producers is not a new idea. Sometimes, it's successful — as Chianti is in Italy — but lacking government-regulated direction for such a project, can a community of winemakers accomplish the task on its own? The ultimate determination of success is down the road, but the consortium can claim initial triumph with the release in June 2004 of the first (2001) Coro Mendocino, Zinfandel-based red wine blends.

Mendocino County has less than 50 wineries operating within its borders, but 18,000 acres are planted to grapevines. So the majority of Mendocino fruit is going to other wineries for bottlings not carrying the Mendocino Appellation. "Mendocino County loses out when only people inside the wine industry know how good our grapes are," says Sally Ottoson, owner and winemaker of Pacific Star Winery (Fort Bragg, CA). "Coro was conceived as the way to communicate our pride of place."

The eight participating wineries, from among the nation's biggest to one of its smallest, include Fetzer Vineyards (2.5 million cases), Brutocao Cellars, Eaglepoint Ranch Winery, Gabrielli Winery, Graziano Family Wines, Pacific Star Winery, Parducci Wine Estates, and Golden Vineyards (about 225 cases).

"Coro started out as a winemaker roundtable that asked the question: What do we do the best here in inland Mendocino?" says winemaker Sam Gabrielli, Gabrielli Winery (Redwood Valley). "We conceded Cabernets to Napa, and Pinot Noirs to Russian River and Anderson [valleys], and came upon Zinfandels, Petite Sirah, and other Mediterranean varietals."

"This program represents America's first *appellation controlleé* wines," adds winemaker Greg Graziano. "Our group believes that Zinfandel is one of the best wines in the world and that Mendocino is blessed with many diverse climates and soil types that showcase the quality of this grape. We also believe that blending of compatible varieties with Zinfandel will overcome any shortcomings that Zinfandel may have with any given vintage."

Coro Mendocino production protocols

Each winery's blend contains a foundation of Zinfandel (40% to 70%), according to production protocols. Members of the Consortium Mendocino, under the auspices of the Mendocino Winegrowers Alliance, developed those protocols and agreed to follow them as a group.

There is plenty of room for individual expression with the second-tier blending varietals, which include Syrah, Petite Sirah, Carignane, Sangiovese, Grenache, Dolcetto, Charbono, Barbera, and Primitivo. No other varietal in the blend may exceed the percentage of Zinfandel. In addition, up to 10% of the blend may be wild card varietals of the winemaker's choice.

The consortium established a generous chemistry and ageing range for Coro Mendocino blends as well, hoping to establish guidelines that would lead to the best quality wines to represent Mendocino. Guidelines must be met for alcohol level (12.5% to 16%), pH (3.2 to 3.8), total acidity (0.4 to 0.9 g/ 100ml), glucose/fructose enzymatic (less than 700mg/ 100ml), volatile acidity (less than 0.1g/ 100ml), and malic acid (less than 35mg/ 100ml).

The wines are judged twice by a panel that includes participating winemakers, before each winery's blend can wear the Coro Mendocino label. If a blend misses any production parameter on the first judging, there is time to adjust before the final decision on whether to accept it as a Coro wine. All eight 2001 Coro wines are between 14% and 15% alcohol, between 3.49 and 3.79 pH, with total acidity between 0.61 and 0.70 g/100ml.

Ageing must be at least one year in barrel, minimum of 25% and maximum of 75% new oak, and a minimum of six months in bottle before release.

Coro, a word meaning "chorus" in both Italian and Spanish, was chosen to represent the image of a chorus of winemakers blending their skills and wines into a whole greater than the sum of its parts.

"The idea of the Coro project appealed to me instantly," says Ottoson. "My fondness for Italian-style wine has really guided my winemaking path. I studied old European winemaking techniques and knocked on doors to talk to as many of the old timers as I could find."

Ottoson says that the 2001 Pacific Star Coro Mendocino contains 40% Zinfandel, 25% Petite Sirah, 15% Charbono, 10% Barbera, and 10% Pinot Noir. "While Pacific Star Winery is on the edge of the ocean [in a Mendocino coastal town], I can access grapes from vineyards all over the county. I was amazed to find so many wonderful old varieties — Carignane, Grenache, Barbera, and of course, Charbono, which has become something of an obsession for me."

The 2001 Coro Mendocino from Graziano Family of Wines (Redwood Valley, CA) has 55% Zinfandel, 15% Sangiovese, 15% Dolcetto, and 15% Barbera. "There are many old plantings of Zinfandel and other compatible varieties in Mendocino County, which occupy many different soils," Graziano notes. "With all of the new plantings of varieties like Syrah, Grenache, Petite Sirah, Dolcetto, Barbera, and Sangiovese, we have many blending options to show what can be done in creating a unique wine with great distinction."

"Many Mendocino growers, and Coro winemakers, are third and fourth generation Italian families who chose Zinfandel and the other grapes for the Coro blends because they've learned over decades that those varietals grow best here," agrees Ottoson.

Gabrielli Family Wines' first Coro blend is 56% Zinfandel, 22% Petite Sirah, 11% Syrah, and 11% Sangiovese. Sam Gabrielli used all Mendocino County oak barrels to age the wine.

Winemaker Bob Swain at Parducci Wine Estates (Ukiah) blended 67% Zinfandel, 22% Petite Sirah, and 10% Syrah for his 2001 Coro Mendocino. Fetzer Vineyards (Hopland) used 49% Zinfandel, 38% Syrah, 8% Petite Sirah, and 5% Grenache Noir in its blend, made by consulting winemaker Dennis Patton, who also made the Coro blend for Golden Vineyards. Golden's 76 cases of Coro Mendocino will be the very first wine for sale by this new winery.

Fetzer had a big part in the early development of the Coro Mendocino concept. The idea was originated by winemakers Dennis Martin, Patton, and

ScareWyndmill™
To birds windmill looks like flock of birds taking off in fright.

Patent Pending

Improved double bearing for longer life.

36" dia. blades that repel birds in up to a 2 acre area.

Effective for birds in vineyards, fruit trees, and blueberries.

Effective on wild turkeys.

30 day unconditional money back guarantee.

$79.00

JWB Marketing
Call:(800) 555-9634
www.birddamage.com

former Fetzer President Paul Dolan, who took the notion to the Winegrowers Alliance, where it became a full community effort. Fetzer marketing and public relations professional Jim Caudill helped hone the brand image and nomenclature for Coro Mendocino, and Rick Roese, a packaging designer at Fetzer, developed the name and designed the Coro package.

"I was pretty skeptical when the realization came that the Coro branding needed to express our unity of purpose — which meant that eight ferociously independent winemakers had to agree on a common label design," muses Ottoson. "Hours of lively meetings found us finally doing the democratic thing — we voted. Those who dissented came into the fold gracefully, and I'm grateful to Rick Roese for hanging in there with us through the painful design process."

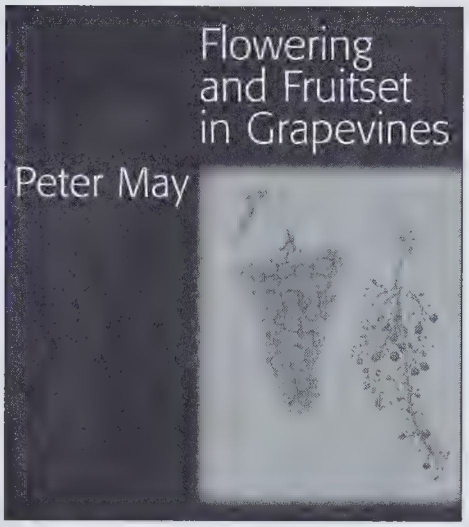
Roese claims this was actually one of the most enjoyable design experiences he can remember. "These winemakers are very straightforward and comfortable with each other as a group," he says. "Once the group decided what we wanted the brand to do for Mendocino, the package really came together."

Each Coro Mendocino wine will use identical bottles, labels, capsules, and shippers. The only differences will be the names of individual wineries and winemakers on the front label, and the list of grapes comprising the blend identified on the back. Building a unified brand identity was vital to the design process. The idea, as with Chianti wines, was to build an instantly recognizable look for consumers to identify with the blend.

The 2001 Coro Mendocino blends will be small releases for each winery (ranging from 76 to 500 cases) but nonetheless represent a significant commitment on the part of each winery toward a marketing ideal — marketing their unique place, an ultra-premium blend, and their community as a brand. Suggested retail price of the 2001 Coro wines is $35.

With only a small production of 2001 Coro blends, the wineries kept marketing local to Northern California with the June launch. Tastings for local media, an article in the *San Francisco Chronicle*, and a Wine Affair weekend invitation to the mailing list of the Winegrower's Alliance comprised the modest marketing efforts. The wines will not be sold to wholesalers and the usual distribution networks, but at each winery's tasting room and on the new Coro Mendocino website (accessed through www.mendowine.com).

"One of the interesting things about this wine and this project is that everybody blended a very small quantity, so nobody has to sell this wine tomorrow to survive," concludes Patton. "This gives the winemakers the rare freedom to build structure into the wine, to ensure that this wine has a shot at being great not just next year, but possibly for the next 20 years." ■



One of Australia's eminent viticultural researchers, Peter May, undertook an exhaustive survey of published research to produce a valuable account of grapevine flowering and production of young berries. Flowering and fruitset, and how environmental conditions affect these processes are described in detail. The importance of establishing and maintaining long-term records of local weather conditions to show the connections between weather and flowering is explained. While there are limited means of redressing poor fruitset once it has occurred, its potentially devastating impact can be minimized. This book offers suggestions on how this can be accomplished.

A valuable book for all growers who need to understand how weather affects fruitset. This 128-page book with color and b&w photography and bibliography is published by the Phylloxera and Grape Industry Board of South Australia in association with Lythrum Press.

For sale on ***PWV* Bookshelf** for $26.

CORK PROCESSING
ALL CORK PRODUCTS

M.A. Silva

QUALITY

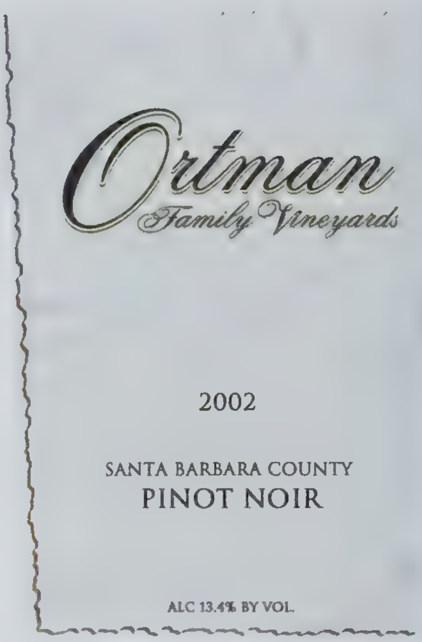
"M.A. Silva corks allow our wine to fully evolve."
- Greg Graham, Rombauer Vineyards

Schedule a tour of our facility today

975 Corporate Parkway, Suite 125
Santa Rosa, CA 95407
Telephone (707) 636-2530
Fax (707) 636-2531
www.masilva.com
info@masilva.com

ORTMAN FAMILY VINEYARDS

Grafting new venture to established roots



BY Eleanor & Ray Heald
Contributing Editors

"Mr. Chardonnay," Chuck Ortman, has started over. Ortman began his career in 1968, working with Joe Heitz (Heitz Wine Cellars, St. Helena, CA) and retired in 2003 from Meridian Vineyards (Paso Robles, CA). Today, with his son Matt (winemaker), who worked in the Meridian Vineyards laboratory, and daughter-in-law Lisa (public relations and marketing director), Ortman has established Ortman Family Vineyards in San Luis Obispo, CA.

Ortman was one of the first California winemakers to explore the benefits of barrel fermentation of Chardonnay, a classic Burgundian technique that eventually swept the California wine community and helped earn Ortman the nickname Mr. Chardonnay in industry circles.

Yet from day one, Ortman was also a proponent of Chardonnays that express balance and elegance, two traits that continue to define the Ortman Family Vineyards approach to the varietal. The current venture, however, extends well beyond Chardonnay.

"The project is so cool," Ortman says with an ear-to-ear grin. "I get goose bumps. In my career, I advanced from winemaking to the corporate wine world, and I am now completing the circle by returning to my roots through Ortman Family Vineyards.

"It's great to once again check the vineyards, stick my nose into barrels, and be more involved in the everyday hands-on winemaking process.

"Ortman Family Vineyards is artisan winemaking. We call all the shots. I don't write a work order for someone else to taste the barrels. And I get to do this with my son and daughter-in-law. How great is that?"

Getting started

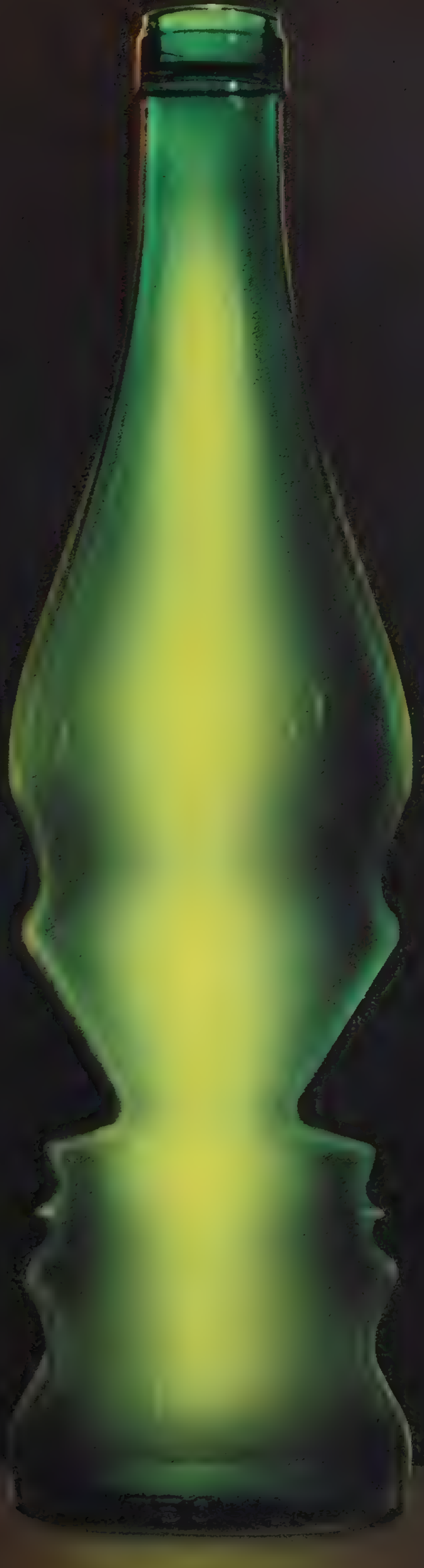
Ortman Family Vineyards' goal is to produce fruit-forward wines from Central Coast, Napa Valley, and Oregon sources. Pinot Noir and Pinot Gris will come from Oregon, where the Ortmans own 18 acres of vineyard near Erath Vineyards in Dundee.

Ortman currently produces a Napa Valley Cabernet Sauvignon from purchased fruit grown on Howell Mountain and in Rutherford. In the Central Coast, Pinot Noir is sourced in Edna Valley through Jim Efird (Pacific Vineyard Co.), Firepeak Vineyard, and vineyards in the Santa Rita Hills.

The Ortmans are also partners in 144 acres of virgin land off Orcutt Road in the heart of Edna Valley. In 2005, they will plant 16 acres to Syrah, Pinot Noir, and Chardonnay. They are actively planning to establish a tasting room and full-fledged winery at this location, with a projected production of 5,000 to 6,000 cases. Construction is scheduled to begin in 2005, with the facility opening in 2006. At first, fruit will be mainly sourced until family-owned vineyards come on stream.

"I've seen too many wineries start out at 20,000 cases and grow too fast," Ortman recalls. "I want my kids to have

Matt and Chuck Ortman.



A world leader in glass packaging, Saint-Gobain companies like ***Emballage*** and ***Vetri*** are responsible for many of Europe's most exclusive and coveted bottle designs. Today, all those famous names have a familiar face: your Saint-Gobain Containers sales representative, who can now access any product in the Saint-Gobain family and coordinate ordering, billing, customer service and technical service from a single point of contact.

When you're ready to face the possibilities, contact your sales representative, or call 707-863-4082 or visit our website at www.sgcontainers.com.

SAINT-GOBAIN
CONTAINERS

© 2004 Saint-Gobain Corporation

a comfortable living, enjoy the wine business but keep it in the family."

The brand was launched in March 2003 with 359 cases of 2000 Napa Valley Cabernet Sauvignon ($50), 550 cases of 2001 Edna Valley Chardonnay ($28), 314 cases of 2001 Santa Barbara County Pinot Noir ($34), and 340 cases of 2001 San Luis Obispo County Syrah ($30).

Santa Barbara County Pinot Noir has transitioned to vintage 2002 and a 500-case production released in 2004 at the launch price. A new wine, 180 cases of 2002 Paso Robles Sangiovese ($20), was released in 2004.

Marketing scheme

For this limited-production family winery, the Ortmans take a very personal approach to marketing. To build relationships and awareness of their wines, they work closely with their distributors and accounts in California, Idaho, Illinois, Nevada, North Carolina, Ohio, Montana, Utah and Hawaii.

They participate in trade and consumer tastings across the U.S., making direct contact with a current and future customer base.

"Our goal," Lisa explains, "is to give people a reason to care about our wines; to communicate what sets our wines apart in terms of their style and vineyard expression. Additionally, we stress our family winemaking tradition and commitment to quality.

"Our marketing budget is limited, so we focus on the fundamentals. We employ media relations and press releases to communicate our news to interested wine media.

"We make sure that samples are sent to media interested in reviewing our wines. We produce wine fact sheets, sell sheets, brochures, and other tools that communicate our message and support our wines in the marketplace. We also have a multifaceted web site that is both consumer and trade friendly."

Via the website (www.ortmanvineyards.com), consumers can access an online wine shop. Additionally, the Ortmans have formed a small wine club.

Wine visions

The Ortmans will be blending their wines to produce the best flavor. "It's exciting," Ortman notes, "to make several vineyard-designated Pinot Noirs, but I prefer to use the fruit from multiple vineyards to make one great Pinot Noir. It's no different than the concept of a clonal mix. Winemakers want a mix of clones in the final blend to add flavors and complexity to their wines."

Matt adds that Ortman Syrah is a blend of warm and cool climate fruit. In his opinion, warm climate Syrah has dark, jammy flavors, while the variety from a cool climate has better structure. A warm climate heightens fruit elements and a cool climate provides backbone for the wine.

Don't Cheat Your Wine
Quality Refractometers Create Quality Wine

ISO 9001 certified, ATAGO has been producing quality Refractometers for over 60 years. Winemakers around the world agree that ATAGO Refractometers are the most durable, efficient, accurate and attractive instruments available.

Digital Handheld Refractometer "Pocket" PAL-1
- 0.0-53.0% Brix Range
- Easy clean-up under running water
- Accuracy +/- 0.2% Brix
- Pocket... to your Palm... to Perform!
- List: $295.00 PAL-1

ATAGO U.S.A., Inc.

13005 NE 126th Place,
Kirkland, WA 98034
1-877-ATAGO-USA
Email: wine@atago-usa.com
www.atago.net

GRAPEVINE LABORATORY
(Located near Sacramento)

Xylella (Pierce's disease)
- Real-time PCR technology
- Highly sensitive
- Completed in 30 minutes
- Works year round
- Quantitative

Also available:
PCR testing for 16 viruses
Virus eradication by meristem culture
Variety ID by DNA markers

Cal SPL
California Seed & Plant Lab, Inc.
www.calspl.com
(916) 655-1581

"The bottom line," emphasizes Ortman, "is that we want our wines to be delicious. We have the philosophy that we will not bottle a wine until we have it the way we want it. It has to be right or else. If we have a wine that isn't just the way we'd like it, we take it home, try it with food, discuss it, and try to decide how we can make it complete and something we can be proud of."

Ortman Family Chardonnay emphasizes elegance. They are striving for wines with enticing aromas that invite consumers in, then catch them on the middle palate, and end with layers of flavor.

"We are not trying to make a big, heavy, over-worked Chardonnay," Ortman maintains. "Edna Valley Chardonnay exhibits significant tropical fruit. We want hints of peaches, pineapples, and nectarines, but in an elegant, toned-down presentation. I also want a mineral quality with crisp acidity."

Oregon project

Ortman Family Vineyards has been in the works for several years. Ortman purchased the 40-acre Oregon parcel (found for him by Rob Stuart, former winemaker at Erath Vineyards) in 1999. In 2003, 15 acres were planted to Pinot Noir and three acres to Pinot Gris.

Pinot Noir vines are Wadenswil and Dijon Clones 113 and 115 on 3309 rootstock, Pommard on Riparia Gloire rootstock, and 777, and 667 on 101-14 and Riparia Gloire. The Pinot Gris Clone 146 was planted on 101-14. The rootstocks were matched to each soil profile.

The soil is predominately well-drained Willakenzie over sedimentary rocks of varying depths, but also includes variations from Jory clay loam to shallower Steiwar over basalt rocks.

Vines are spaced 4x7 and trained VSP with a unilateral cordon, cane-pruned. The vineyard is managed by Matt Novak of Results Partners (McMinnville, OR).

"Our plan is to de-stem the fruit in Oregon," Ortman explains, "and truck the must to Edna Valley; by then, harvest there will be nearly complete. We make all our wines at Orcutt Road Cellars."

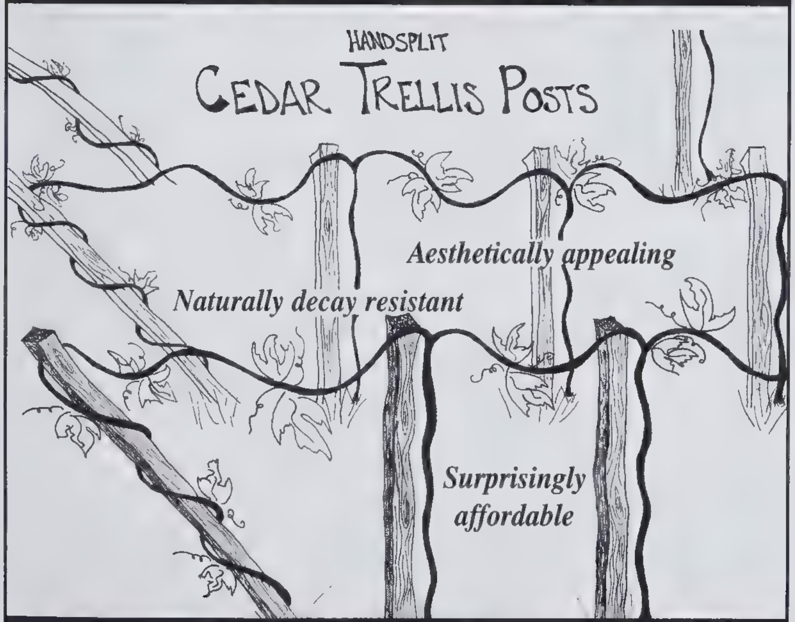
Burgundian varietals

Chardonnay is sourced from Edna Valley, which is the home of Ortman Family Vineyards. This region boasts a long, steady growing season that is optimal for Chardonnay, yielding an abundance of flavor and crisp acidity — both of which are essential to the Ortman vision for the varietal.

"Each growing season is unique, and therefore the proper yield is flexible as it must be in tune to current growing conditions," explains Matt. "On average, Chardonnay is in the range of 3 to 3.5 TPA."

Chardonnay is fermented and aged in tight-grained, medium-toast French oak barrels, ensuring a slow, even extraction of oak. It is aged *sur lie*,

Cedar, the Right Choice
for your Vineyard



ENYEART CEDAR
800-551-6657
Ask for it at your local Vineyard Supply
Enyeart Cedar Manufacturing Cedar Mountain Brand™
Or find a retailer at
www.enyeartcedar.com/trellis

THE LOGIX SOLUTION:
Built For Power & Designed For Expansion

The Logix Temp Stat is expandable to a complete control system with cutting-edge monitoring, reporting and accessibility.

TC-2000 comes with:
PC Enabled (call for features)
NEMA-4X Washdown Enclosure
UL listed for Industrial Rating
Two Relay Outputs with Independent Heating-Cooling
High/Low Temp Alarming
Brix Field Entry
Dual Temp Probe Option
Pump-over Control/Notification
Keypad Lockout
Designed for Low Light Conditions

LOGIX®
phone 425-828-4149
www.logix-controls.com

which also helps absorb the more bitter oak compounds. However, the lees are not stirred because both Chuck and Matt believe that an ultra-creamy texture inhibits cuisine compatibility.

Ortman Chardonnay's tropical fruit flavors, along with its notes of pear and honey, are attributed to the superb growing conditions in Edna Valley. To this, they blend a small percentage of Chardonnay from Santa Barbara County; a component that adds appealing accents of citrus and flint.

Ultimately, the Ortmans hope consumers discover a sense of dimension, proportion, and complexity, in their Chardonnay — a signature combination that sets it apart in matching and uplifting fine cuisine.

Despite his history with Chardonnay, Ortman declares: "Nothing compares to my passion for Pinot Noir. It's a fickle varietal, which makes it all the more engaging. Each vintage practically dares you to make it right."

Matt maintains that he inherited a similar passion for this vexing varietal. As with all the best things in life, great Pinot Noir does not come easy — but that's part of the fun, they contend.

Ortman Pinot Noir is sourced from two Santa Barbara County vineyards: Riverbench in the Santa Maria Valley and White Hills near Los Alamos, both of which contribute unique and synergistic qualities to the wine.

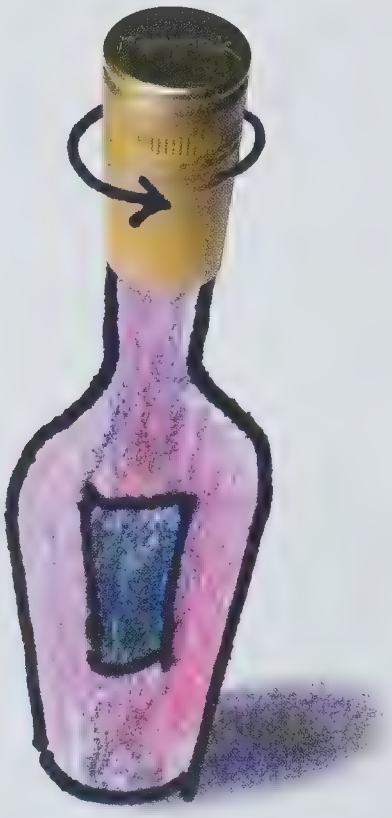
The rocky soils of Riverbench and sandy soils of White Hills are both well-drained, which helps amplify flavor concentration, while encouraging the more complex attributes of the varietal, including accents of cinnamon and earth. Average yield from the two vineyards is 2 to 2.8 TPA. In 2003, many of the clones produced just below 2 TPA.

The core flavor profile is supple and juicy, with rich berry and cherry notes. Hints of smoke and spice are imparted by ageing in a balance of new (65%) and neutral (35%) French oak barrels for one year.

The goal is to experience pure fruit and vineyard expression while also attaining the textural layers and flavor nuances that define truly great Pinot Noir.

"The secret of the outstanding forward fruit flavor and lingering spicy finish in our 2001 Pinot Noir is the methods we learned with famed Burgundian winemaker André Porcheret," explains Ortman.

Porcheret was director of Domaine des Hospices de Beaune. In between his two stints at this Domaine, he worked at Domaine Leroy (in Vosne-Romanée), and is now a consultant in demand. While at Meridian, Ortman consulted with Porcheret, who imparted philosophical and practical methods for making Pinot Noir, some of which Ortman incorporated into his own vision for the varietal and has passed on to Matt.



Take it for a spin

Introducing SAVin, the Newpak Screwcap

Considering screwcap technology for some of your wines? Now you have a choice. The new SAVin screwcap from Newpak USA offers the highest quality whether you choose from our readily available stock or let us produce your custom design. And it's all backed with the service and support you would expect from a member of the Cork Supply Group, your top of the bottle experts.

newpak USA

Newpak USA, a member of the Cork Supply Group

Newpak USA • 537-F Stone Road, Benicia, CA 94510 • 707-746-5704

Stylizing other reds

"As winemakers," Matt maintains, "it would be nearly impossible to reside in San Luis Obispo County and not be seduced by Syrah. Locally, this varietal has risen from virtual obscurity to virtual dominance in just 10 short years — and for good reason. It performs exceptionally well across the Central Coast, adapts to a variety of microclimates, and is delicious."

At Ortman Family Vineyards, the goal is to maximize this versatility by merging fruit from the warmer climes of Paso Robles with fruit from the cooler environment of Edna Valley. With Syrah, both appellations can stand on their own, but the Ortmans believe that when the unique attributes of both regions are combined, they yield a Syrah of uncommon character and complexity.

In Ortman Syrah, the Paso Robles component contributes dark, concentrated varietal fruit and silky tannins from fruit yielding between 3 and 4.5 TPA. The Edna Valley portion adds accents of peppery spice and enhanced mid-palate structure from fruit yielding 3 to 3.5 TPA.

"Due to the warmer climate in Paso Robles," says Matt, "we feel the proper yield is a bit higher than in the cooler Edna Valley. We feel that if the vines are cropped too low, they will ripen much too quickly."

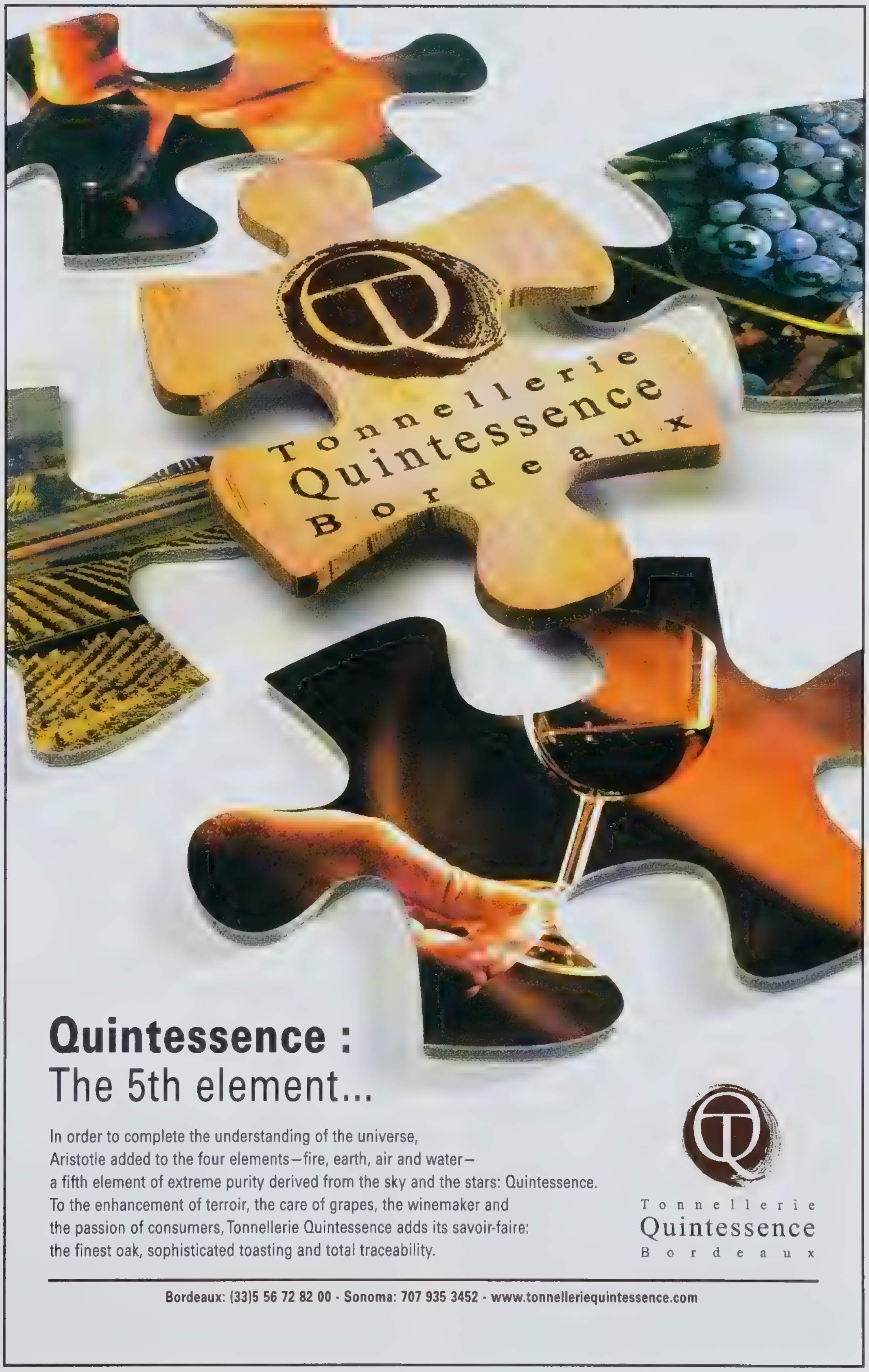
The ageing regimen typically spans 18 months in French oak barrels, about a third of which are large Cognac (90 gallon) barrels. The use of Cognac barrels extends the ageing regimen for tannin moderation while ensuring that the oak influence does not mute or overpower the wine's bright, expressive varietal flavors.

The result is a smooth, harmonious wine that captures the full spectrum of Syrah's considerable charm, including rich, intense flavors of blackberry and black cherry, with hints of spice and earth. A balance of firm, integrated tannins ensures that Ortman Syrah, while enjoyable in its youth, is also built for longevity.

Cabernet Sauvignon is a "back to the future" varietal at Ortman Family Vineyards. Their connection to the variety in Napa Valley dates back to Ortman's earliest winemaking days in the late 1960s and early 1970s, when he worked and consulted for some of the region's premier Cabernet Sauvignon producers, including Heitz Wine Cellars, Spring Mountain Vineyards, Far Niente Winery, and Shafer Vineyards.

"When we established Ortman Family Vineyards," Matt explains, "I enlisted some of my father's old friends, and we persuaded him to reconnect with his roots and incorporate Napa Valley Cabernet Sauvignon into our small family of wines, beginning with the 2000 vintage."

Fruit is sourced primarily from Howell Mountain's White Cottage



Quintessence :
The 5th element...

In order to complete the understanding of the universe, Aristotle added to the four elements—fire, earth, air and water—a fifth element of extreme purity derived from the sky and the stars: Quintessence. To the enhancement of terroir, the care of grapes, the winemaker and the passion of consumers, Tonnellerie Quintessence adds its savoir-faire: the finest oak, sophisticated toasting and total traceability.

Tonnellerie
Quintessence
Bordeaux

Bordeaux: (33)5 56 72 82 00 - Sonoma: 707 935 3452 - www.tonnelleriequintessence.com

Vineyard, with small contributions from Rutherford and Paso Robles. Howell Mountain high-elevation, hillside fruit enjoys a particularly long growing season that amplifies flavor concentration — including signature notes of blackberry and chocolate — while moderating tannin intensity, with a yield of 3 TPA.

The Rutherford component adds a layer of complexity with accents of cedar, coffee, and spice, while a small percentage of Merlot from Paso Robles enhances the wine's mid-palate weight and structure.

The ageing regimen spans 18 months in French oak barrels, 60% new. The use of Nadalié Nevers barrels for Cabernet Sauvignon is a longtime Chuck Ortman tradition. The Nadalié oak's influence is subtle yet distinctive, enhancing the overall dimension of the wine.

"In our Cabernet Sauvignon," Matt continues, "we ultimately aim to maximize the ripe, signature flavors of the Howell Mountain fruit within a context of complexity and elegance, with soft, supple tannins that complement cuisine while rewarding careful cellaring."

Ortman's inaugural Sangiovese from the 2002 vintage unites recent experience with family history. Three years ago, Matt enjoyed an extended winemaking stint at Castello di Gabbiano in Italy, where he worked closely with the Sangiovese grape and developed a keen appreciation for the wines of Chianti Classico.

"Subsequently," Matt adds, "my father and I were inspired to pursue a Sangiovese of our own, sourced from Bob Goodwin's Algunas Dias Vineyard in northeastern Paso Robles, near Hog Canyon."

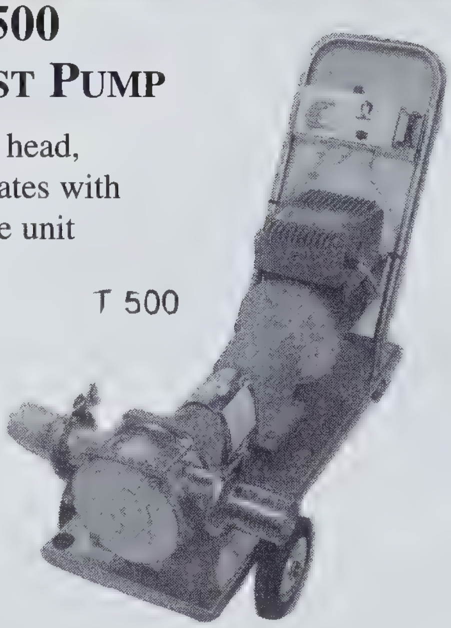
Algunas Dias Vineyard occupies a 20-degree southeast-facing slope, composed primarily of shallow, low-nutrient Arbuckle shale. It lies above the fogline at 1,000 feet elevation, comparable to Chianti Classico. This vineyard's combination of consistent sun exposure, three clones (02, 03, and 04), and challenging soils encourages excellent flavor development and concentration with yields ranging from 3 to 4 TPA.

"Sangiovese clusters at harvest were one-half the size of those that I saw while making Sangiovese in Italy," Matt explains. "We ferment Sangiovese in small four-ton, open-top fermentors, enabling both manual punch-down and regular pumpovers for balanced extraction while blowing off excess alcohol."

To preserve the wine's vivid varietal character in the Chianti Classico tradition, it was aged for 18 months in primarily neutral oak. A small percentage of Merlot was added to the final blend to uplift the aromatic profile.

All in the family

Matt, who was trained as winemaker by his father, grew up in Napa Valley and went on to graduate from California Polytechnic State University



ZAMBELLI PUMP

ZAMBELLI T/500
WINE OR MUST PUMP

Stainless steel pump head, stainless steel faceplates with flexible impeller. The unit has a variable speed motor which is capable of operating in forward and reverse. The unit has 3" triclamp fittings and comes with a stainless steel cart.
Pump speed (rpm) to 700. Flow (gpm) to 200.

NAPA FERMENTATION SUPPLIES
P.O. Box 5839, Napa, CA 94581
575 Third St., Bldg. A, Napa, CA 94559
(707) 255-6372 Fax (707) 255-6462
www.napafermentation.com

RTI SUPER STAT

The Ultimate Control for
Temperature & Humidity

Surface Mount • Panel Mount • PC Option

Easy to program • Simple to operate
Min/Max Memory • High/Low alarms
PC Interface Option

Designed and manufactured by RTI to
meet the needs of the Refrigeration Industry.

REFRIGERATION TECHNOLOGY, INC.
Call: (800) 834-2232
WWW.RTI2000.COM

(707) 987-0500 • Fax (707) 987-4581

at San Luis Obispo, majoring in construction management.

"I like the crafting part of winemaking," Matt admits, "taking raw materials and creating something completely different and wonderful gets my juices flowing." He looks forward to designing and building the tasting room.

Lisa Ortman also graduated from California Polytechnic State University at San Luis Obispo, but with a major in forestry. "I enjoy living in the Central Coast," Lisa says, "the wine people are wonderful, and although running a family business is trying at times, I appreciate that we have complete control over what we do. We make all the decisions about wine style, marketing, public relations, and sales."

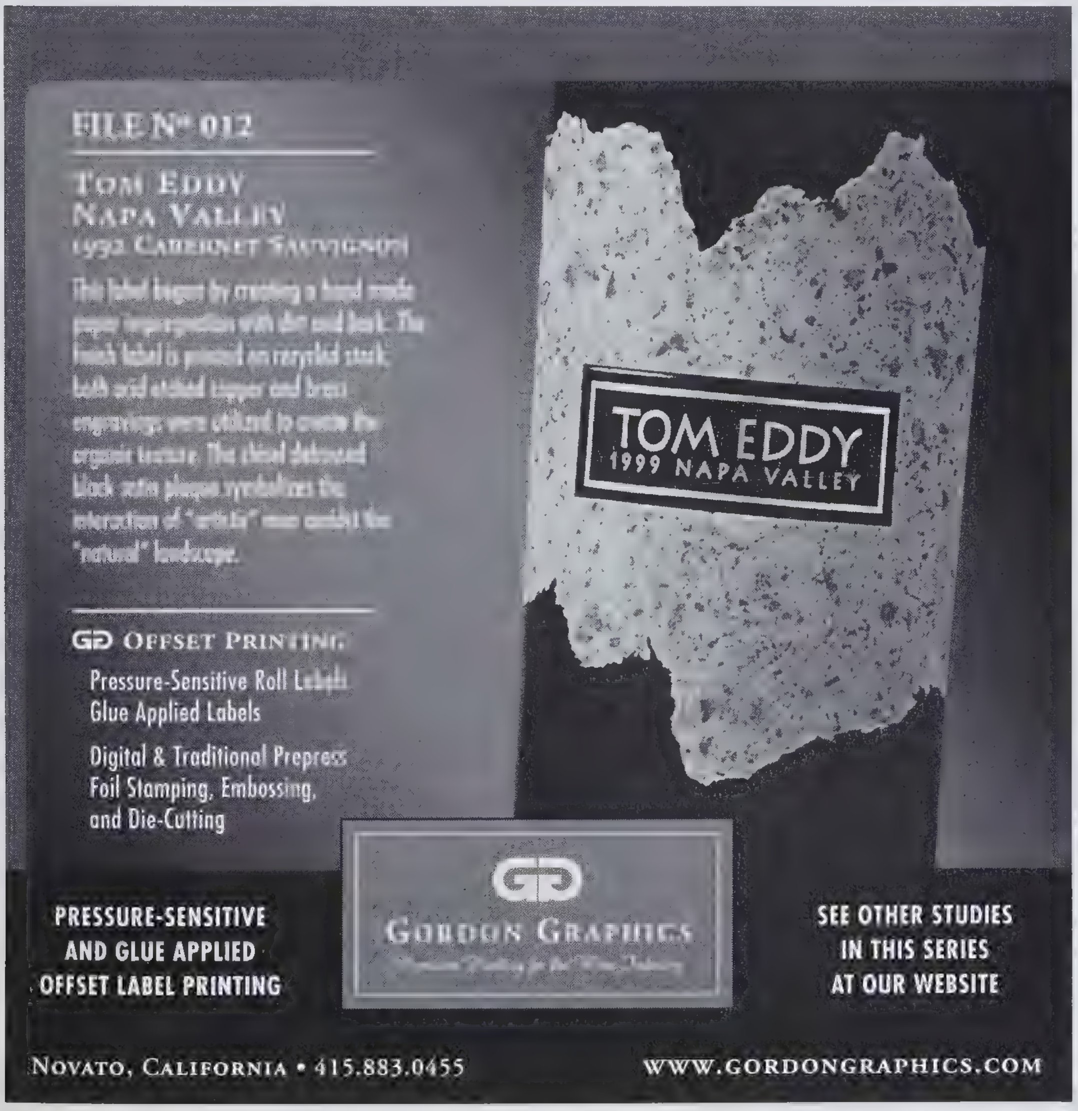
"I'm very proud to be working with my father," Matt adds. "He has seen it all. He has the world of experience we need to make it in a business that usually requires huge capital investment.

"If we were just learning the wine business, there would have been a much longer learning curve in matters of winemaking and production, and we would have been starting at square one in terms of marketing our name and making key distributor and account connections.

"My father brought a lot of experience, connections, and relationships to the table. That gave us a head start and an efficiency advantage. We were able to hit the ground running. We also limited our total production to 1,500 cases the first year, minimizing our capital investment while maximizing our focus.

"We're a small company and do everything ourselves, by hand. We taste every barrel and select only the best. If a barrel doesn't make it into the final blend, we are down that many cases of production. Our style is still evolving as we gain experience and continue to taste wines from around the globe."

Ortman Family Vineyards is a new winery venture to watch! ■


FILE Nº 012

TOM EDDY
NAPA VALLEY
1999 CABERNET SAUVIGNON

This label began by creating a hand made paper representation with dirt and bark. The finish label is printed on recycled stock; both acid etched copper and brass engravings were utilized to create the organic texture. The chisel debossed black satin plaque symbolizes the interaction of "artistic" man amidst the "natural" landscape.

GG OFFSET PRINTING
Pressure-Sensitive Roll Labels
Glue Applied Labels
Digital & Traditional Prepress
Foil Stamping, Embossing, and Die-Cutting

PRESSURE-SENSITIVE AND GLUE APPLIED OFFSET LABEL PRINTING

GORDON GRAPHICS

SEE OTHER STUDIES IN THIS SERIES AT OUR WEBSITE

NOVATO, CALIFORNIA • 415.883.0455
WWW.GORDONGRAPHICS.COM

The Crowning Achievement to Fine Wines™ for 22 Years!

With wine friendly technology, Lafitte includes QA testing for TCA and an **Ozone Infused** humidifying room for all natural and agglo 1+1 corks processed and shipped from our Napa facility.

As always, our custom and stock **PVC, Polylam and Tin** capsules will dress all your bottle designs, in a wide array of sizes, colors and decorative styles.

So, call Lafitte Cork and Capsule and find out why we are "The Crowning Achievement to Fine Wines.™"

1982 Lafitte CORK CAPSULE 2004
The Crowning Achievement to Fine Wines

45 Executive Court
Napa, CA 94558
707.258.2675
800.343.CORK
Fax 707.258.0558
www.lafitte-usa.com

Flavor 'scalping' by wine bottle closures

'Winemaking' continues after bottling

BY Dimitra Capone, Mark Sefton,
Isak Pretorius, and Peter Høj,
Australian Wine Research Institute,
Adelaide, SA

Objective measurements of winegrape quality are difficult to achieve, not the least because the relationship between winegrape composition and the final product that reaches the consumer depends on a myriad of influences beyond the vineyard. Nowhere is this more evident than with the volatile wine components that are responsible for a wine's aroma, and which also contribute in a major way to wine flavor.

A few wine flavor compounds that are formed in the grape remain largely unchanged for much of a wine's lifetime. *Iso*-Butylmethoxypyrazine, which is said to confer a "herbaceous" or "vegetative" character to wine and is particularly important to Sauvignon Blanc and Cabernet Sauvignon wines, is one such compound.[1]

However, with respect to most of the volatile flavor components of wine, no more than a tiny proportion (if any) are present in the grape at harvest, and the concentration of these volatile components in wine usually bears little resemblance to their concentration in the fruit from which the wine was made.

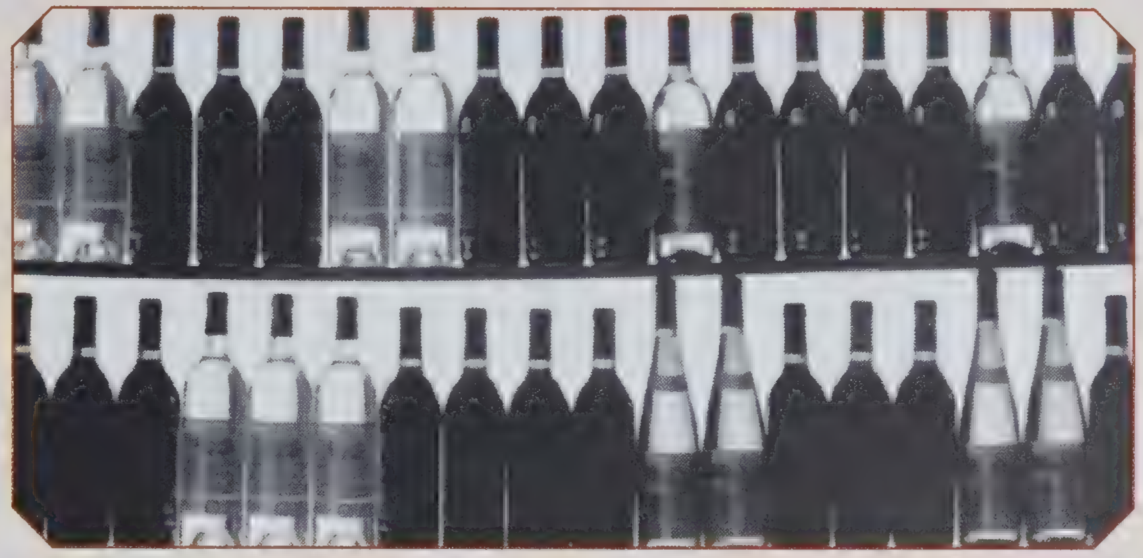
Many volatile wine flavor compounds are released during vinification, maturation, and storage. They are formed from involatile grape-derived precursors such as glycoconjugates or cysteine adducts, either by wine micro-organisms or by chemical reactions in the wine medium. Simple metabolites of wine micro-organisms as well as some volatile oak constituents can also have a major impact on wine flavor.

The flavor of wine continues to change while it is in the bottle. Some flavor compounds found in young wines will disappear over time, mainly as a result of both oxidative and non-oxidative transformations. New flavor compounds can also be generated by these chemical reactions. Even wine bottle closures can have an impact on wine flavor.

Impact of closures on wine aroma and flavor

It has long been recognized that wine bottle closures play a role in how wine flavor changes during bottle storage, principally by acting as a partial barrier to the transmission of oxygen.

Most great wines have one thing in common.



Us.

Great winemakers rarely agree on many things, but one thing they do agree on is Gusmer*Cellulo*. They know that the right supplier can make all the difference when it comes to making great wine. Whether it's an eloquent Pinot Noir, a rich Cabernet Sauvignon, or a bold Sauvignon Blanc, a late delivery of bacteria, the wrong filter media, or any number of other production problems can have a negative effect on your wine.

That's why some of the best winemakers in the world rely on Gusmer*Cellulo*. We give you reliable on-time delivery, exceptional customer service, the finest quality products, and the most in-depth product knowledge in the industry.

Gusmer*Cellulo* offers you the highest quality products backed by over 75 years of knowledgeable, customer focused sales and service. From Filter Media and Filter Housings to Enzymes, Fining Agents, Yeast and ML Bacteria, Granular Oak and more, when it comes to making wine, Gusmer*Cellulo* is the name great winemakers rely on. So should you. For more information visit our website at **www.gusmercellulo.com** or contact your nearest Gusmer*Cellulo* sales office.

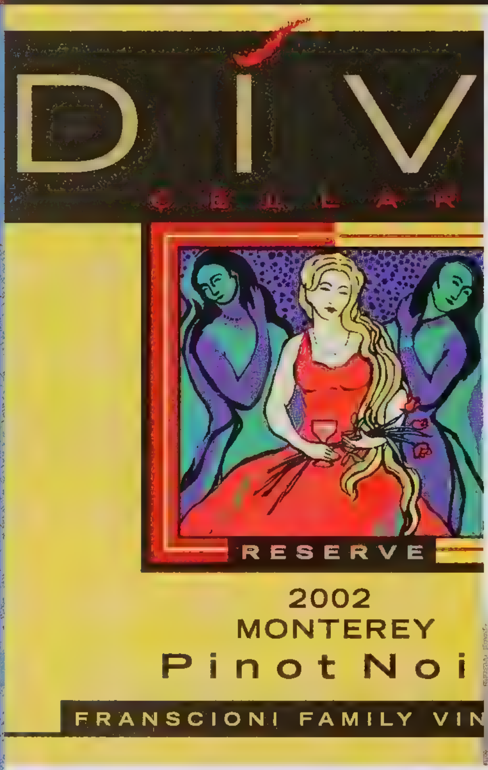
GUSMER*CELLULO*
GUSMER ENTERPRISES, INC.
Service With Knowledge™

East Coast
1165 Globe Avenue, Mountainside, NJ 07092
Phone: (908) 301-1811 Fax: (908) 301-1812

West Coast
81 M Street, Fresno, CA 93721
Phone: (559) 485-2692 Fax: (559) 485-4254

THE WINE LAB™
110 Camino Oruga, Napa, CA 94558
Phone: (707) 224-7903 Fax: (707) 255-2019

Thinking Outside The Bottle



Innovative Design

Award-winning Printing

Trouble-free Application Equipment

One Source

- Web-UV Offset NEW
- Web-UV Flexo
- Sheeted Offset
- Offset Folded Cartons
- Screen Printing
- Foil Stamping
- Embossing
- Custom Equipment
- Case Labelers
- Bar Code Labelers
- Label Applicators for Multiple-oriented Labels: *front, back, neck, & cork*

WS Packaging Group - new name, familiar faces

Blake Printery and Concept Packaging are now part of the WS Packaging Group family and, as a result, can now bring you even more products and services. From label design to application equipment, WS Packaging Group is now your complete resource for wine packaging.

Your label. Your brand. Project an image that transcends words. Project an image that is worthy of the vintage inside the bottle. WS Packaging Group can exceed your expectation for design, print quality, and label application.

Give us a call: 800-234-3320

WS Packaging Group, Inc.®

Leaders in Printing and Packaging Worldwide

WS Packaging Group, Inc
2222 Beebee Street
San Luis Obispo, CA 93401
800.234.3320
www.wspackaging.com

WS Packaging Group - Automated Systems
13 Carry Way
Carson City, NV 89706
775.246.5977
www.wspackaging.com

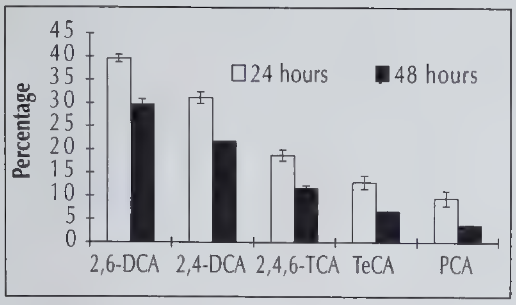


Figure I. Proportions of chloroanisoles remaining in 200 mL of white wine following the immersion of four single piece straight wine corks for 24 or 48 hours (Capone et al. 1999). 95% confidence intervals are shown.

The occasional extraction of 2,4,6-trichloroanisole (TCA) from cork bark closures into wine is well-known as a means whereby an unwanted musty aroma can be imparted to wine.

There is also some evidence that other constituents of closures such as geosmin and 1-octen-3-one can be extracted into wine with various effects on aroma and flavor.[3,8]

Over the past several years, the Australian Wine Research Institute (AWRI) has strongly focused on cork-derived wine taint research and the factors that influence the frequency and intensity of unwanted musty aromas in wine.

Although not all cases of musty wine taint have their origin in wine corks (for example, moldy barrels and wood products contaminated during shipping have also been implicated), it is clear from the various cases investigated by the Industry Services section of the AWRI that TCA derived from cork closures is responsible for the majority of such problems.

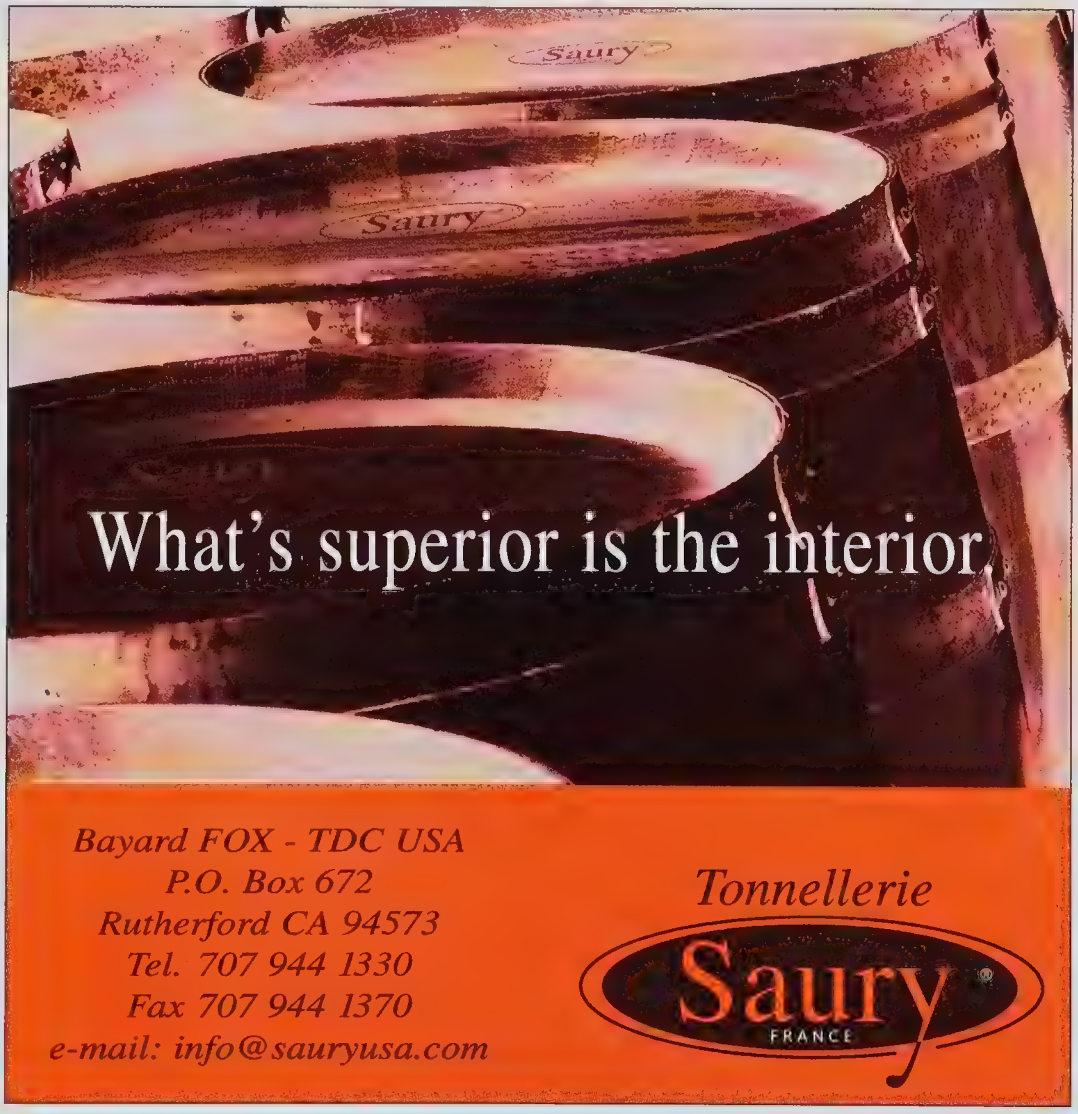
The fact that cork closure production mostly takes place on the other side of the world from Australia was an obvious barrier to our being able to conduct useful investigations into cork/oak forest management or cork bark handling in the factory. For this study, we chose to focus on the transmission of TCA between wine and cork closure in the bottle. There were many outcomes from this work; not the least of which was our ability to distinguish between cases in which TCA was derived from cork and those in which it was already present in the wine.[4]

It soon became obvious that, although wine could extract a small proportion of TCA from cork closures, corks could absorb a much higher proportion of TCA and other chloroanisoles from wine (Figure I). Indeed, one case was observed in which wines that had become tainted with tetrachloroanisole through contact with contaminated oak were "cleaned up" as a result of the cork closures absorbing this unwanted musty-smelling compound from the wine.[4] This capacity for corks to absorb TCA from wine also had implications for the way many wineries and cork supply companies assessed batches of corks for possible TCA contamination prior to use.

Our observations of the absorptive capacity of cork closures for chloroanisoles led us to question whether "normal" wine flavor components could also be absorbed. Packaging components for other food products (such as citrus juices) can modify product quality by absorbing aroma compounds (such as limonene) from the product, a process sometimes known as "flavor scalping."

Therefore, AWRI set up a long-term trial to study the absorptive capacity ("flavor scalping") of various wine bottle closures. The closures used in this trial were from the same batches used in the AWRI's earlier closure trial (bottling in May 1999) that focused on white wine oxidation and sensory properties.[5] They comprised a roll-on tamper evident (ROTE) screw cap (wadding material type: EPE30A faced with aluminium/PET at 2.0 mm caliper), two grades of natural bark cork (Reference 2 and 3), a technical cork closure, and seven synthetic closures.

Some preliminary trials were done with "bag-in-box" packaging which



Bayard FOX - TDC USA
P.O. Box 672
Rutherford CA 94573
Tel. 707 944 1330
Fax 707 944 1370
e-mail: info@sauryusa.com

Tonnellerie
Saury®
FRANCE

showed that certain wine flavor compounds could be partially removed by the packaging in an extremely short time frame.[7]

Absorption of flavor compounds can be determined in one of two ways — either directly, by extracting the closures themselves and analyzing the extracts for absorbed compounds; or indirectly, by determining the decrease in concentration of these compounds in wine during storage. For technical reasons, the latter option is far more practical, and it was the approach taken in this study.[7] In this case, it was also essential to have control samples stored with and without air in all-glass containers (sealed ampoules), so that the loss of wine components by chemical degradation could be distinguished from loss by absorption.

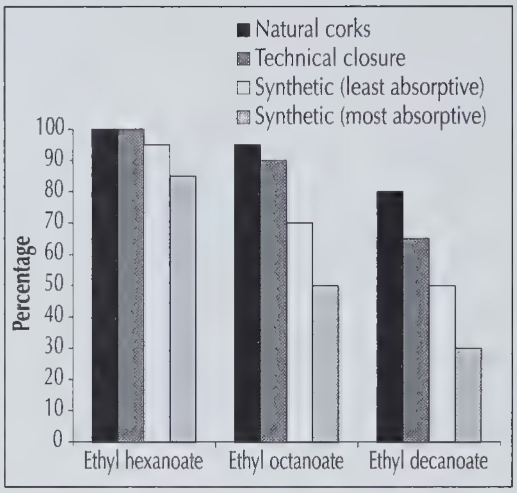


Figure II. Proportions of ethyl esters remaining in white wine stored in 750 mL bottles sealed with various closures for two years. The proportions are expressed as the mean concentration of esters in five replicate treatments per closure type, as a percentage of the mean concentration in three control wines stored in glass ampoules for the same period.

We were interested in observing the effects of bottle closures on a range of flavor compounds. Since no one wine contains all flavor compounds in measurable concentrations, we spiked a Semillon wine with each of the volatile compounds we wished to study.

The wine was then bottled and the bottles sealed with the closures listed above. The bottles were stored in an inverted position in a near-constant temperature storage facility also used for the AWRI's original closure trial (temperature range of 13°C to 23°C, with a mean temperature of 17°C, and an average daily temperature fluctuation of approximately 1°C).[5]

After two years of bottle storage, the concentration of some, but not all, of the flavor compounds added to the wine changed significantly. Some of these changes can be attributed to absorption by the closures, and others to chemical modification which occur regardless of how the wine is sealed (see below).

Don't let your crop go to the birds.

Protect your investment.

State-of-the-art random digital sound technology repels birds safely and economically using actual bird distress and harassment sounds. One-year satisfaction guarantee.

Bird Gard's exclusive Bird Gard® and Crop Gard® bird repellers are proven effective for repelling unwanted birds from vineyards, orchards, and agricultural sites.

Bird Gard LLC 1-888-332-2328
www.birdgard.com • info@birdgard.com

maurivin®

active dry wine yeast

PDM
Primeur
AWRI 795
Cru - Blanc
EP2
SW
New! Elegance
BP 725
AWRI 350
AWRI R2
Sauvignon L3
Maurivin B
UCD 522

Burns Philp
www.maurivin.com

CENTRAL VALLEY, CALIFORNIA
BRENNTAG PACIFIC, INC.
P: (559) 268 4571
F: (559) 268 0619

CENTRAL & NORTH COAST, CALIFORNIA
PACIFIC COAST CHEMICALS CO.
P: (510) 549 3535
F: (510) 549 0890

WASHINGTON STATE
PACIFIC COAST CHEMICALS CO.
P: (206) 781 6402
F: (206) 781 8421

OREGON
PACIFIC COAST CHEMICALS CO.
P: (206) 781 6402
F: (206) 781 8421

EAST COAST & MID-WEST
G.W. KENT, INC.
P: (734) 572 1300
F: (734) 572 0097

Offering over 300 wine bottle options, from economically priced to heavyweight and specialty. Call (707) 422.9999 for a sales rep in your area, or to schedule an appointment to visit one of our showrooms. For a preview of stock offerings, visit www.demptos.com.

www.demptos.com
West Coast
2300 Cordelia Road
Fairfield, California 94534
tel (707) 422.9999
fax (707) 422.1242

Mid-West & East
2301 River Road, Suite 101
Louisville, Kentucky 40206
tel (502) 394.9298
fax (502) 394.9109

DG®
DEMPTOS
GLASS

In no case was there any evidence of absorption of any of the flavor compounds from the wine sealed under ROTE closure. Where the concentration of compounds had decreased during the storage period in wine sealed under ROTE, similar decreases in concentration were observed for control samples sealed in glass ampoules.

Neither *iso*-butylmethoxypyrazine (herbaceous, vegetative character) nor the oak-related components guaiacol (smoky), 4-methylguaiacol (smoky), vanillin, *cis*- and *trans*-oak lactone (coconut, vanilla, oakwood), 4-ethylphenol (Band-Aid™) and 4-ethylguaiacol (clove, smoky) changed concentration significantly in either the controls or bottled wines over the two-year period. All of these compounds were chemically stable in this white wine (including control wines stored under air) and were not affected by bottle closures.

The concentration of the fruity-smelling simple fermentation esters, such as ethyl butyrate, ethyl isobutyrate, ethyl isovalerate, ethyl hexanoate, ethyl octanoate and ethyl decanoate, changed in the control wines, presumably as a result of competing hydrolysis and esterification reactions.

Some esters increased in concentration while others decreased. These changes cannot be extrapolated from this wine to others, because the factors affecting such changes (relative starting concentrations of esters and their corresponding acids) vary from one wine to another.

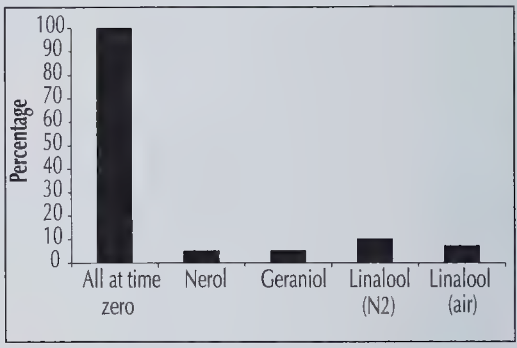


Figure III. Proportion of monoterpenes remaining in white wine stored in sealed glass ampoules for two years. Proportions are a percentage of the concentration of the monoterpenes at the time the ampoules were sealed (time zero).

Some esters were also affected by the closures (other than ROTE) to varying degrees. The short chain ethyl isobutyrate, ethyl butyrate, and ethyl isovalerate were unaffected by the closures. Ethyl hexanoate, ethyl octanoate, and ethyl decanoate were all partially absorbed by the closures, and for each closure type, the amount of absorption increased with increasing ester chain length (Figure II).

Air for sale.

Many feel that wine aged in traditional oak barrels tastes best, and few if any will argue the contrary. The gap is closing however, and various oak integration systems have come a long way from where they were ten years ago. Enough to astonish reputed tasters, and find their way into reserve programs. One of many refinements has to do with micro-oxygenation, or helping a wine breathe right to properly mature. We've closely observed the way a barrel tends to breathe life into its guest. How a stave, when toasted by fire just right, can affect the composition of a red or white wine. Where did that stave come from? Was it dried in open air for three years? Asking a lot of questions has equipped us with many answers for those who might consider it audacious to compare barrel flavors to alternative techniques. If you need more convincing, please give a call. We have a glass of wine we'd like you to taste.

StaVin

StaVin Inc, PO Box 1693, Sausalito, California 94966 t (415) 331-7849 f (415) 331-0516 stavin.com

DSM
Where Quality Is Essential.

ENOLOGY

Fermicru®
Collection Cépage®
Fermivin®
Maxaferm®
Rapidase®

With the acquisition of Gist brocades in 1998, DSM acquired a leading position in the wine industry as the sole producer of both yeast and enzymes. A worldwide network of local distributors allows us to supply winemakers with top quality active dry yeast, enzyme preparations and fermentation bio-regulator.

DSM

DSM Food Specialties USA, Inc.
2675 Eisenhower Avenue
Eagleville, PA 19403

Tel. 610-650-8480 • Fax. 610-650-8599
www.dsm-oenology.com

Our products are available from:

West Coast
KLR Machines, Inc.
350 Morris Street, Suite E
95472 Sebastopol
Tel: 1 707 823 2883
Fax: 1 707 823 6954
Email: klrmach@pacbell.net

East Coast
KLR Machines, Inc.
47 West Steuben
14810 Bath
Tel: 1 607 776 4193
Fax: 1 607 776 9044
Email: klrinc@empacc.net

Both natural closure types (Reference 2 and 3 corks) absorbed no ethyl hexanoate, 5% of ethyl octanoate, and 20% of ethyl decanoate. The technical closure absorbed slightly more of these last two compounds (10% and 35% respectively), but no ethyl hexanoate.

The synthetic closures showed significantly greater absorption of these esters. For ethyl hexanoate the absorption was slight, ranging from 5% (in three closures) to 15% (in two closures). Ethyl octanoate absorption varied from 30% (two closures) to 50% (one closure), and ethyl decanoate from 50% (two closures) to 70% (one closure).

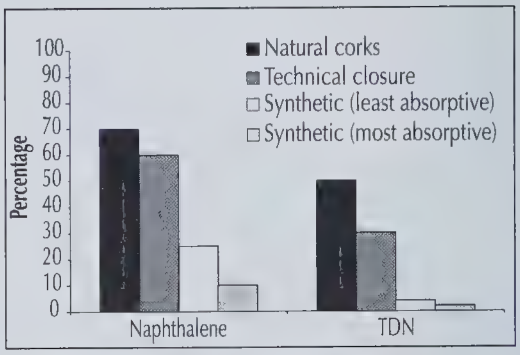


Figure IV. Proportions of naphthalene and 1,1,6-trimethyl-1,2-dihydronaphthalene (TDN) remaining in white wine stored in 750 mL bottles sealed with various closures for two years. The proportions are expressed as the mean concentration of naphthalene or TDN in five replicate treatments per closure type, as a percentage of the mean concentration in three control wines stored in glass ampoules for the same period.

Closure type appeared to have little effect on the concentration of the monoterpenes linalool, geraniol, and nerol. The overwhelming factor affecting the concentration of these compounds in the wines was chemical degradation. At wine pH, nerol and geraniol are converted mainly to linalool, which is in turn converted to the relatively weak-smelling alpha terpineol and terpin hydrate. In these trial wines, less than 5% of the added nerol and geraniol and 10% of the added linalool remained after two years.

In the control samples, headspace had some effect, with a reduction of linalool concentration of approximately 30% in control wines stored under air compared to those stored under nitrogen (Figure III).

The monoterpene rose oxide, which gives a "lychee" character to some white wines, was partially absorbed by synthetic closures only. This absorption ranged from 15% to 45%, depending on closure type.

The taint compound naphthalene (added to give an indication of the absorption of structurally similar compounds) was substantially absorbed,

IF IT'S
WINE BOTTLES...
- New Glass – Domestic & Imported
- Resterilized Glass
- Glass Sterilization/Delabeling
- Mobile Decanting Services
- Screening, Etching, Repackaging & Custom Bottles
- Shipping Materials

WE DO IT!

ENCORE!

860 S. 19TH ST.
RICHMOND, CA 94804

PHONE: (510) 234-5670
FAX: (510) 234-0433

www.encoreglass.com

Gina.Abeyta@Encoreglass.com
John.First@Encoreglass.com
Dave.Hammond@Encoreglass.com
Dan.Mansir@Encoreglass.com
Barrie.Wheeler@Encoreglass.com

particularly by the synthetic closures. The least absorptive of these removed 75%, while 90% was removed by the most absorptive synthetic closure. The natural and technical corks absorbed less of these compounds (30% and 40% respectively) (Figure IV).

The grape-derived hydrocarbon known as TDN can give a kerosene-like flavor to some white wines. It can sometimes be found in relatively high concentrations in Riesling wines, particularly those that have been in bottle for two years or more. This compound was the most strongly affected by the closures (with the exception of the ROTE) (Figure IV).

All of the synthetic closures had removed between 96% and 98% of the TDN after two years. Natural corks and technical closures removed 50% and 70% respectively, while ROTE closures removed none at all. TDN is sometimes regarded as undesirable when present in high concentration, so the capacity of closures to remove this particular flavor compound (and perhaps others) from wine is certainly not always deleterious to wine quality.

In summary, relatively non-polar (non water-soluble) volatile com-

ELIMINATE THE COMPETITION

Protect Your Soil
with Aurora Gold Hard Fescue

NEW
Glyphosate
Tolerant
AURORA
GOLD
HARD
FESCUE
for weed free
turf!
U.S. Patent No. 6 066 786
Turf Seed, Inc. / Hubbard, OR
800 247 6910
Net Wt. 50 lbs. (22.7 kg)

Growers today fight noxious weeds and grasses in their vineyard with conventional herbicides and cultivation. The herbicides are costly and cultivation exposes the soil to wind and water erosion.

THE SOLUTION: Seed with glyphosate tolerant Aurora Gold hard fescue. This eliminates dust erosion and provides an aesthetically pleasing work surface for tending and harvesting the grapes. The cost of 41% glyphosate is generally less than $10 per acre for two applications. Many vineyards in California, Oregon and Italy are now very pleased after two years of experience with Aurora Gold.

FREE 25 lb. samples are available for established vineyards on request. Contact Tom Stanley at Turf-Seed, Inc.,
1741 Santa Ynez, Ventura CA 93001, Phone: 805-641-9911.

After an eight-ounce rate application of glyphosate, Aurora Gold thrives while weeds are eliminated. (Photo taken 60 days after spraying.)

TURF-SEED, INC.
Your Success Depends on Seed / Satisfaction Guaranteed

800-247-6910 • www.turf-seed.com • email: info@turf-seed.com • fax: 503-651-2351

pounds such as TDN and the longer chain ethyl esters were absorbed by synthetic and natural cork closures, but not by ROTE screw caps. The more polar compounds were not absorbed at all by any closure. Synthetic closures showed a much greater capacity to absorb non-polar compounds than did natural cork bark or technical closures.

The technical closure behaved in a similar fashion to the natural corks but had a slightly higher capacity for absorption. Among the synthetic closures, some consistently appeared to have had a higher capacity for absorption than others.

Some compounds (oak components, *iso*-butylmethoxypyrazine, 4-ethylphenol, TDN) were completely stable in wine, even with an air headspace, while others (monoterpenes, damascenone) are substantially degraded in wine, whatever the closure.

Further data analyses and interpretation of this study are currently under way. At this point, it appears clear that the choice of closure could have an effect on wine sensory characteristics, not only due to gross oxidative changes and transfer of taint compounds described earlier (such as Godden *et al.* 2001),[5] but also through direct absorption of compounds to the closure material.

Since closure manufacturing technologies and materials are likely to change due to ongoing product development, winemakers must, at all times, conduct their own trials to make informed choices about the closures most suited to their preferred styles of wine and commercial objectives.

Conclusions

Results of this trial so far make it clear that modification of wine flavor in the bottle is not just a result of chemical and microbiological transformations of wine components, but could also be partly due to the absorptive capacity of bottle closures.

The observations made on TDN are a good case in point. Attempts to modify TDN concentration in Riesling wine by carrying out particular vineyard practices are pointless if the wine is to be bottled and sealed with synthetic closures.[6] On the other hand, if the wine bottles are sealed with ROTE closures, then the outcome of viticultural practices intended to modulate the concentration of TDN in the finished wine will be magnified, compared to wines bottled and sealed with natural cork closures. ■

Acknowledgements

This project is supported by Australia's grapegrowers and winemakers through their investment

NOW'S YOUR CHANCE
TO CLEAN UP!

ProxyClean™
CONCENTRATE

The oxygen-based replacement for chlorinated cleaners. An excellent cleaning agent for barrels, bungs, hoses, presses, lab equipment, floors and clothing.

For more information check out our web site at
www.barrelbuilders.com

Call for FREE SAMPLE & Use Instructions

800.365.8231 • 707.942.4291
1194 Maple Lane, Calistoga, CA

BARREL BUILDERS INC.

Rolling
Barrel Room Ladder

All aluminum construction
Narrow profile to maximize barrel count
Accommodates up to 6-barrel stacks
Heavy duty non-marking locking casters
Handrails and toe boards

Stokes Ladders, Inc.,
P.O. Box 445
Kelseyville, Ca. 95451

Phone. 800-842-7775
email. info@stokesladders.com

body the Grape and Wine Research and Development Corporation, with matching funds from the federal government. We thank Alan Pollnitz for his expert technical advice and help in preparing the figures for this report.

Edited from: AWRI-Report Sept–Oct 2003 VOL. 18 NO. 5 The Australian and New Zealand Wine Industry Journal.

References

1. Allen, M.S. and M.J. Lacey. (1999) *Methoxypyrazines of grapes and wines.*

2. Waterhouse, A.L., S.E. Ebeler. (eds). In: *Chemistry of Wine Flavor.* ACS Symposium Series 714. Washington D.C., American Chemical Society pp 31–38.

3. Amon, J.M.; J.M. Vandepeer, R.F. Simpson. (1989) "Compounds responsible for cork taint in wine." *Aust. N.Z. Wine Ind. J.* 4: 62–69, Institute publication #337.

4. Capone, D.L., G.K. Skouroumounis, D.A. Barker, H.J. McLean, A.P. Pollnitz, and M.A. Sefton. (1999) "Absorption of chloroanisoles from wine by corks and by other materials." *Aust. J. Grape Wine Res.* 5: 91–98, Institute publication #616.

5. Godden, P., L. Francis, J. Field, M. Gishen, A. Coulter, P. Valente, P. Hrj, and E. Robinson. (2001) "Wine bottle closures: physical characteristics and effect on composition and sensory properties of a Semillon wine. I. Performance up to 20 months post-bottling." *Aust. J. Grape Wine Res.* 7: 64–105, Institute publication #666.

6. Marais, J.; C.J. van Wyk. and A. Rapp. (1992) "Effect of sunlight and shade on norisoprenoid levels in maturing Weisser Riesling and Chenin Blanc grapes and Weisser Riesling wines." *S. Afr. J. Enol. Vitic.* 13: 23–32.

7. Pollnitz, A.P., D.L. Capone, J.I. Campbell, S. Franke, H. McLean, G.K. Skouroumounis, and M.A. Sefton. (2002) "Some applications of analyses of volatile flavour compounds to wine." Blair, R.J.; Williams, P.; Hrj, P.B. (eds). In: Proceedings of the eleventh Australian wine industry technical conference; 7–11 October 2001; Adelaide, SA, Adelaide, Australian Wine Industry Technical Conference Inc, pp 162–164, Institute publication #702.

8. Simpson, R.F. (1990) "Cork taint in wines: a review of the causes." *Aust. N.Z. Wine Ind. J.* 5: 286–296, Institute publication #375

ETCHED IMAGES
707.252.5450

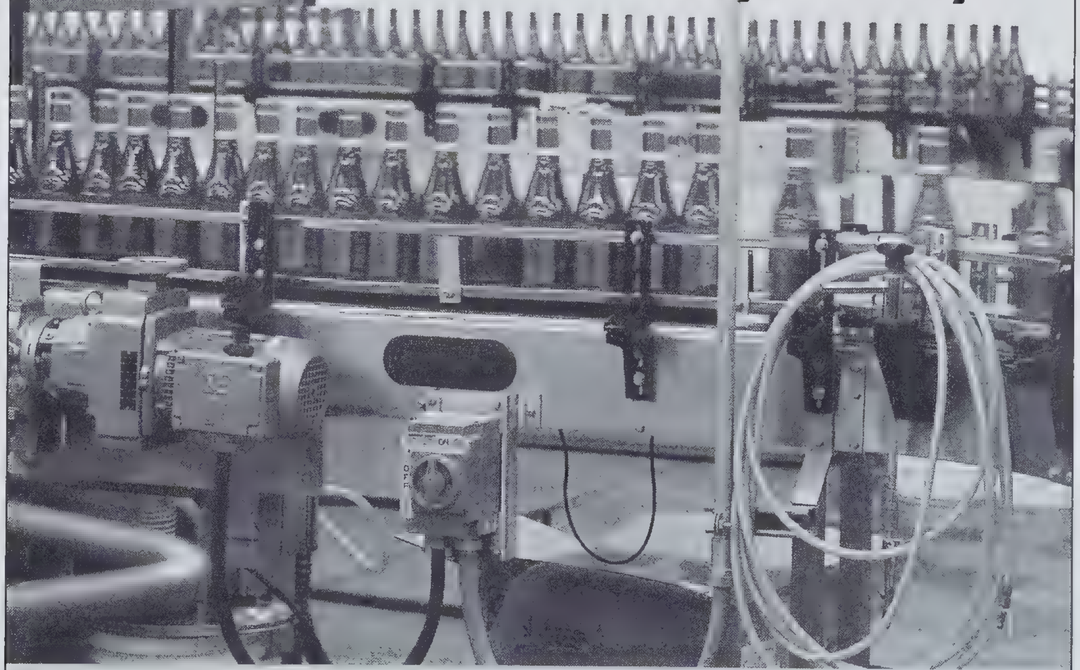
"Etched Images' service and quality keeps us coming back. We appreciate their commitment to their work."
K.R. Rombauer III,
Rombauer Vineyards

COMMITTED TO Excellence SINCE 1993

Services include:
- △ Wine Bottle Etching & Painting
- △ In-House Artists to Make Your Ideas Come to Life
- △ Bottle Blackening
- △ Sealing/Dipping "Wax"
- △ Wood Wine Boxes with Your Logo
- △ Competitively Priced Empty Bottles
- △ Short Run, Full Color Die-cut Wine Label Printing
- △ Laser Engraved Box Lids
- △ Refrigerated (55°), Bonded Warehouse (BW5999CA)
- New! △ Residential & Commercial Custom Architectural Glass Etching

A Napa Valley Bottle Etching & Painting Company
707.252.5450 • 1758 Industrial Way • Ste. 101 • Napa Valley, CA • www.etchedimages.com

If it's fabricating...
If it's installing...
It's Lloyd Aubry



LLOYD W. Aubry
Contact Robert Butler or Barrett Randick
2148 Dunn Road • Hayward, CA 94545
510.732.9038 • fax: 510.732.3137

NEW TWIST

R.H. Phillips takes a leap with spirits packaging

BY Tina Vierra

Dramatically departing from traditional wine packaging, R.H. Phillips Winery (Esparto, CA) began bottling its "R.H. Phillips" brand entirely in spirits-type packaging with screwcap closures in May 2004. "Spirits packaging is more consumer-friendly," says Lane Giguiere, winery co-founder. "Consumers are comfortable handling, opening, and reclosing traditional spirits bottles, as opposed to wine packaging." A similar departure is being considered for the winery's flagship Toasted Head brand.

The R.H. Phillips line — value-priced, classic varieties including Sauvignon Blanc, Chardonnay, Cabernet Sauvignon, Merlot, White Zinfandel, and Shiraz — will total 300,000 cases in 2004. Suggested retail will be around $9. Total production of the winery's four brands (including Toasted Head, EXP, Kempton Clark, and R.H. Phillips value classic brands) is 700,000 cases.

"John Giguere (winery co-founder) gave a Tangueray Ten bottle to Derek Lanier (R.H. Phillips' in-house designer), liking the high shoulders, dimensions, and closure," recalls Steve Carmell at Gallo Glass (Modesto, CA). "With that as a start, we created custom molds for the bottle shapes, in dead leaf green for red wines and Chardonnay and flint for Sauvignon Blanc and White Zinfandel."

Lanier calls the custom shapes New Millenium Bordeaux and Burgundy. A cartouche is inset on the outside of the bottle.

A sheath cap closure was supplied by English manufacturer GlobalCap (distributed by APM in Benicia, CA), featuring a hidden screwcap under an outer capsule. The closure is familiar to consumers of high-end spirits.

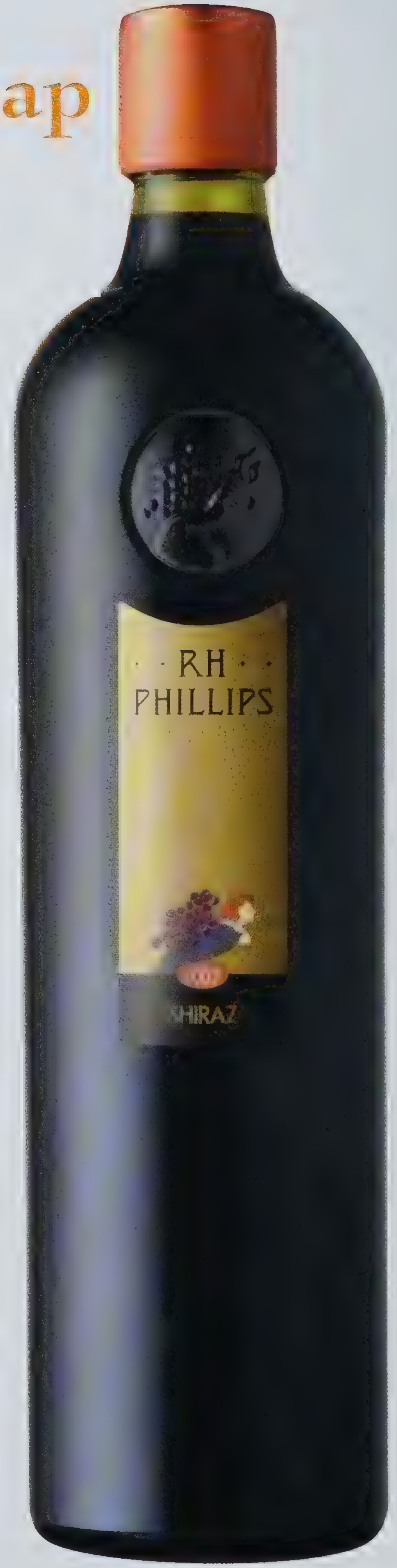
Longview Fibre (Oakland, CA) designed new shippers to allow for the tapering at the top of the bottles and to accommodate the clamping equipment in the winery's case-goods warehouse. In addition, Gallo Glass worked very closely with GlobalCap to get the thread closure pattern exactly right.

"Because the sheath caps are manufactured in England, they had different points of measurement on the bottle finish; these can really throw off the thread molds," notes Carmell. "The tuck-under bead at the bottom was also very tricky. It was critical to define bottle finish dimensions, making sure that we were speaking the same dimensional language."

Ken Lazzaroni, winery plant manager, is enthusiastic about the closure and the new CAS 8-8-360 capper from Fowler-Zalkin (Athens, GA). "The closure is a Torqued-On Pilfer Proof (TOPP) rather than the traditional ROPP (Roll-On Pilfer Proof), and the distinction is important," he explains. The TOPP closure is an assembly comprised of a short-threaded inner closure surrounded by a long flange, aluminum outer closure.

"The capper has twin turrets, each with eight heads. The first is a screw-capping turret equipped with magnetic clutch, screw-capping heads with positive gripping chucks to apply the cap with 25-inch-pounds of torque. There's less room for error than with the straight-down pressure of ROPP. The second turret is equipped with rotating sealing heads that descend and form the tuck-under bead, giving a pilfer-proof groove at the bottom edge of the closure."

Lazzaroni reports the machine has an average operating speed of 220 bpm, with a maximum of 280 bpm, and can also apply ROPP closures if the winery changes its packaging.



"But the TOPP closure is better for the consumer," Lazzaroni believes. "It's an easier on-and-off, a simple single twist with a smooth action and no tinny, metal sound. It's already in use with high-end spirits like Cointreau. It's the next generation for wine in screwcaps."

Winemaker Barry Bergman agrees, and predicts his winemaking techniques will need no major changes to bottle under screwcaps. "We will change very little, based on conversations with other wineries using similar closures. We typically bottle with very low dissolved oxygen, and this will not change with the TOPP closure. We have, over time, settled on free SO_2 levels at bottling, based on experience and monitoring the level of dissolved oxygen at bottling."

Bergman discounts any fears about the ageing potential of wine under screwcaps. "These are all wines meant to be consumed near-term. Clearly, the time frame is shorter for Sauvignon Blanc than it is for Cabernet Sauvignon. At least in theory, the reds should age longer.

"Unless the wine is very young, there should not be any real reductive threats to wines bottled under screwcap. I have never subscribed to the theory that oxidative ageing benefits wine under cork. Such ageing is an uncontrollable event, in that each cork and bottle will vary in the level and rate of oxygen transfer. Therefore, if part of your winemaking game plan is to improve the wine in bottle through this relatively uncontrolled event, you are essentially leaving this process to chance."

With winemaker, plant manager, founders, and packaging experts all in agreement about this next generation of TOPP screwcap, R.H. Phillips will also be putting its signature Toasted Head brand under screwcap.

"We plan to release 50,000 cases of 2003 Toasted Head Chardonnay in the TOPP closure in November," notes Lane Giguiere. "We are very excited about the reception of the R.H. Phillips brand in screwcap and are anxious to develop a new package for Toasted Head." Still in the early phase of that package development, R.H. Phillips is considering using a spirits-type bottle for Toasted Head also. ■

LODI · WOODBRIDGE
WINEGRAPE COMMISSION

AN OPEN LETTER TO CALIFORNIA VINTNERS

Today's competitive wine market demands that we examine our business plans and maximize our resources. Brands are the way to the future, we are told. With an eye to your most important raw material, winegrapes, we suggest another look at Lodi.

The transformation that has taken place in Lodi in recent years is remarkable. It began with the launch of an intensive quality enhancement program. We educated growers on what great wines taste like, and how to make them from their fruit. We invested in research on crop loads, deficit irrigation and trellis systems. We replaced thousands of acres of vines with varieties more suited to our climate and today's market. At the same time we launched our Sustainable Viticulture Program, an industry leader.

As a result we've enjoyed great advances in quality. In our first year as a stand-alone region at the State Fair Wine Competition we garnered 22 gold medals, among them ties for "Best Syrah" and "Best Zinfandel" in California.

Today Lodi produces a consumer-pleasing style of New World wine perfect for the American palate – lush, fruit-forward, full-flavored, but soft. In response to the demand for these wines there are now 50 wineries in Lodi, compared to 8 when we started in 1991. Also, dozens of California wineries are creating Lodi appellation brands within their product lines, something we're pretty proud of.

Perhaps wine writer Dan Berger says it best – "One of the most difficult things to do in this world is change a reputation, but the Lodi wine grape region is doing just that."

The quality/price ratio of Lodi winegrapes is unmatched in the market today. Please call your broker or contact us directly for wine samples, tours of the region or meetings with prospective growers. Let's grow together.

Sincerely,

Mark Chandler

Mark Chandler
For Lodi Winegrowers

(209) 367-4727 www.lodiwine.com

LOOKING IN ALL THE RIGHT PLACES

Eliminating TCA from sources other than corks

BY Henry Work

Over the past 20 years, advances in laboratory analysis and significant efforts to eliminate chlorine compounds in the processing of wine corks have combined to help identify and minimize the problems of cork taint due to TCA (2,4,6-trichloroanisole). However, all the investigations and scrutiny of TCA have led to the discovery of other unexpected sources of contamination, such as contaminants in the cellar or in shipments of supplies.

Since some of these sources have recently affected highly respected wineries, it should be a warning for all wineries and suppliers of barrels and corks to be especially vigilant about sources of chlorine-containing compounds.

According to independent consultants Sue Weeks and Mark Sefton of the Australian Wine Research Institute, while TCA is "the most potent of the chloroanisoles," there are other compounds that also produce the musty, wet cardboard-like taint.[1] Other culprits are 2,3,4,6-tetrachloroanisole and pentachloroanisole. In this report, which is intended as a checklist for cellar personnel and suppliers to examine their facilities and processes for sources of potential contamination, these three compounds will be lumped together and described as TCA.

"TCA is formed by the interaction of molds and chlorine in the presence of specific hydrocarbon precursors," explains Michael Long, president of Heritage Systems, Inc. (supplier of peracetic acid) in Napa, CA.[2] "The molds are originally present in cork bark or cooperage and can infect cork and other wood in the winery. The final step is the methylation of 2,4,6 trichlorophenol to TCA by the fungal strains." (Methylation is the combining of the methyl radical with the chlorophenols.)

The best way to eliminate TCA is to remove mold and chlorine from the winemaking process. But because eliminating all molds is extremely difficult, it may be easier to remove the sources of chlorine. Unfortunately, chlorine is more ubiquitous than we might imagine, and tiny amounts of chlorine in any form (liquid or airborne) can be enough to stimulate the production of TCA.

In the winery

A first line of defense is to check for chlorine-containing products. An inspection of the winery should start in all chemical storage and cleaning closets. Examine the labels of all products used to clean and sanitize barrels, hoses, stainless steel tanks, bottling equipment, cellar floors and walls. Note the standard cleaners, such as chlorinated TSP, but also look for chlorine-impregnated sponges and such common cleaning products as "409," "Clorox," or "Tilex," which also contain chlorine compounds.

Examine your entire winery facility; while chlorine-containing products may be absent from the cellar itself, it is possible that they are available to the cleaning staff for cleaning the offices and tasting room. Of even greater concern are the break room and restrooms for the cellar crew, which may be in or adjacent to the cellar.

If you outsource the cleaning duties, review with the company what cleaners it is using, and make staff aware of the potential problems with using chlorine in the cellar.

Check winery water sources

Chlorinated water can be another source of contamination.[3] Check the water used throughout the winery. Wineries and cooperages should use clean well water.[4] If well water is not available and the winery uses water from the local municipality, it is most likely chlorinated.

"There are many options available to remove chlorine from water: chemical treatment, specialized ultra-violet destruction, or adsorption are all viable options," adds Long. "However, for most wineries, removing chlorine from the cellar, crush pad, or barrel staging areas is best accomplished by activated carbon filtration."

In 1993, Canton Cooperage began removing chlorine by filtering water through activated carbon before it was used to wet barrels during the toasting process or for testing barrels. All cooperages should examine their water system to eliminate chlorine contamination. Consult with your local water filtration and purification company on how best to remove chlorine from your water supply.

In the winery, examine the sources of water for air conditioners, evaporators, misting system, and hot water heaters for the cellar.

According to James Laube's 2002 report in the *Wine Spectator*, Beaulieu Vineyard experienced TCA taint in wines from one cellar.[5] A subsequent investigation by the winery revealed that chlorinated water was being sprayed through a cellar humidifier on barrels. Potential TCA contamination could occur any time that bungs were removed or the wine was exposed to the air in that cellar.

Check outside the winery. Since chlorine can be airborne, inspect for chlorinated water being used in any spray emitters for plantings that may be near a cellar door and could be blown in. Bill Dyer, a Napa Valley winery consultant, suggests that vineyards should not use chlorinated water anywhere. If they are using municipal water or chlorinated well water, he recommends they find other sources of pure water.[6]

Cellar and barrel cleaning procedures

Jean Arnold, president of Hanzell Vineyards (Sonoma, CA), attributes the causes of that winery's recent TCA contamination to chlorine contained in the cleaning products used to wash stainless steel tanks and old contaminated rubber hoses.[7] In the first case, the rinse water containing the chlorine mixed with organic material in the drains. TCA volatized into the air and settled in and onto barrels. Wine taint occurred in barrels where the bungs were removed for topping. Arnold also notes that the close confines of the cellar diminished dispersion of airborne TCA.

In the second case, old rubber hoses, which were sanitized with chlorinated water while washing tanks, accumulated chlorine from the washing solution in the crevices of the hose. That chlorine combined with phenols in the hose to create chlorophenols. Mold will attack chlorophenols, changing them to chloroanisoles, which contaminated the wine when these hoses were subsequently used to move wine.

To avoid future contamination, Hanzell now uses ProxyClean concentrate, a peroxide-based sanitizer, and new rubber hoses and gaskets. Ventilation has been improved in the cellar and a steel tank installed to store well water. Rather than using chlorine, the water supply line from that tank will be fitted with a UV disinfection system to sanitize winery process water.

Arnold has been extremely responsive to inquires from other winemakers about TCA taint, probably helping others to avoid a similar situation.

Among other wineries fighting to eliminate TCA in their wines is Gallo of Sonoma. Mary Wagner, chief technology officer for E&J Gallo Wine Company, notes that small amounts of residual TCA are still randomly detected in the cellar, even after eliminating the use of chlorine-based cleaning products in 2002.[8]

Since becoming increasingly aware of the possibility of detectable low levels of TCA in cellared wines last year, Gallo of Sonoma embarked on a major campaign to eliminate chlorine, mold, and wood (where possible) in an effort to minimize TCA.

Some practical steps Gallo has taken include maintaining appropriate cellar temperature (55°F) and humidity (70% relative humidity) and insuring adequate cellar ventilation. Hoses and rubber gaskets are also replaced more frequently. All wines are tested for TCA before bottling. Non-essential products that can harbor chlorine or mold, such as cardboard boxes and wooden pallets, are no longer stored in the barrel cellar. Additionally, all incoming products, including barrels, are tested for TCA or its precursors.

Ken Deis, winemaker at Flora Springs Winery & Vineyards (Rutherford, CA), describes a situation some years ago in which a Central California Coast winery experienced TCA in some of its wines due to washing barrels around the bung with chlorinated TSP. Deis suggests that barrel cleaning should be done with hot or cold water, using a pressure washer, or with ozonated water, minimizing the use of any chemicals. If a chemical treatment is needed, a sulfur solution is best.

Adding to Deis' comments about cleaning, Duane Wall, general manager of

☆BATF☆
LABEL APPROVALS

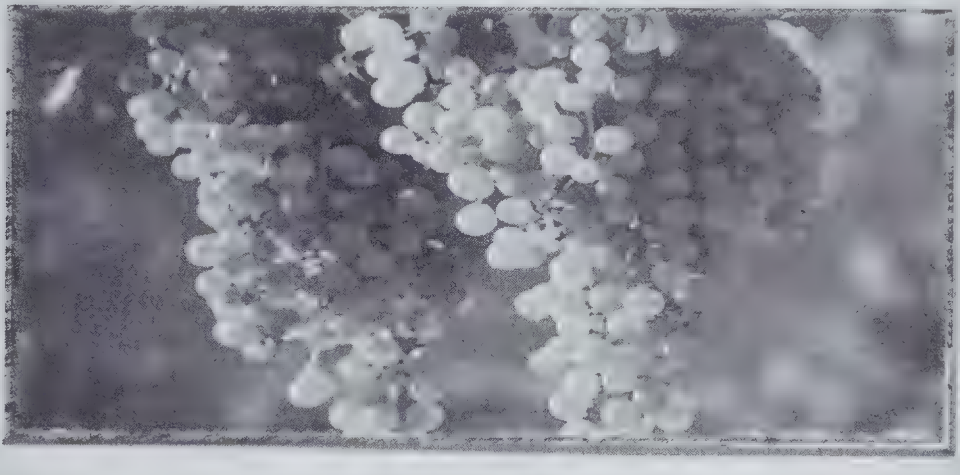
Low per-label costs
Gov't Liaison Negotiations or Footwork

TRADEMARK SEARCHES

As Low as $135.

Your trade names or designs are searched at the U.S. Patent Office to help establish valuable ownership or avoid costly legal liability. Over 100 years' total staff experience handling every government liaison need for industry.

Phone or write for details.
Government Liaison Services, Inc.
200 N. Glebe Rd. #321
Arlington, Virginia 22203
Phone: (703) 524-8200 Fax: (703) 525-8451
TOLL-FREE 1-800-642-6564
Major Credit Cards Accepted
www.trademarkinfo.com



FINDING REAL-WORLD SOLUTIONS FOR CALIFORNIA AND PACIFIC NORTHWEST WINERIES & VINEYARDS

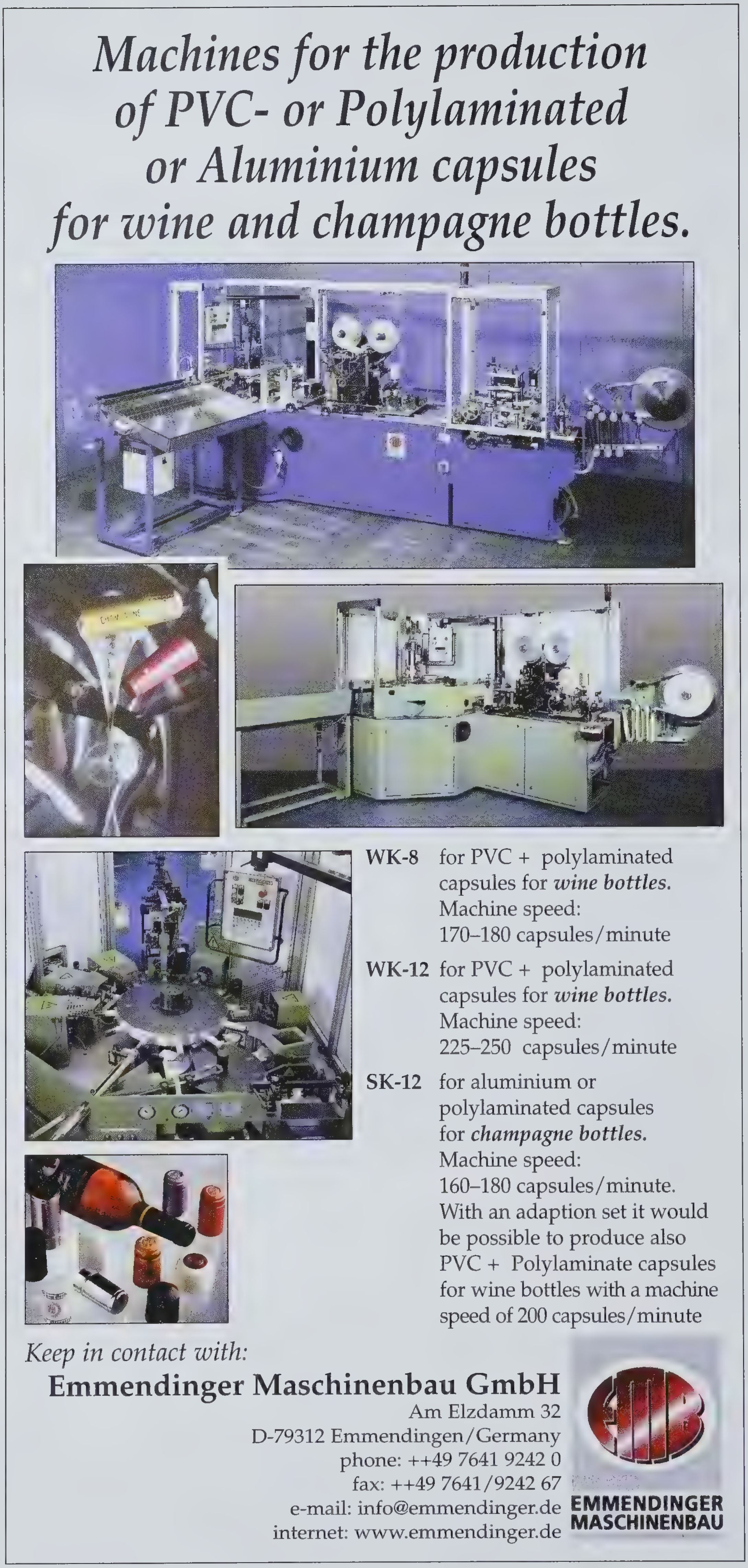
Business Advice
Contracts
Environment
Natural Resources
Real Estate
Land Use
Industry Permitting
Licensing
Trademarks

With more than 70 clients in the wine business, Stoel Rives Winery & Vineyard Lawyers are trusted advisors on all aspects of the legal and business issues facing wineries and vineyards. Our deep industry involvement keeps us abreast of the trends and changes critical to our clients' success. www.stoel.com

In California –
Christopher J. Carr
415-617-8925
cjcarr@stoel.com

In the Pacific Northwest –
Christopher R. Hermann
503-294-9236/206-624-7673
crhermann@stoel.com

STOEL RIVES LLP
ATTORNEYS AT LAW



Machines for the production of PVC- or Polylaminated or Aluminium capsules for wine and champagne bottles.

WK-8 for PVC + polylaminated capsules for *wine bottles.* Machine speed: 170–180 capsules/minute

WK-12 for PVC + polylaminated capsules for *wine bottles.* Machine speed: 225–250 capsules/minute

SK-12 for aluminium or polylaminated capsules for *champagne bottles.* Machine speed: 160–180 capsules/minute. With an adaption set it would be possible to produce also PVC + Polylaminate capsules for wine bottles with a machine speed of 200 capsules/minute

Keep in contact with:

Emmendinger Maschinenbau GmbH
Am Elzdamm 32
D-79312 Emmendingen/Germany
phone: ++49 7641 9242 0
fax: ++49 7641/9242 67
e-mail: info@emmendinger.de
internet: www.emmendinger.de

EMMENDINGER MASCHINENBAU

Nadalie, USA, (Calistoga, CA), strongly recommends sulfuring barrels when not in use to inhibit mold growth.[4] This provides extra protection against TCA contamination should the barrels come in contact with chlorine compounds — either airborne or on the surface.

For cleaning tanks, Flora Springs does use a chlorine solution, but an extremely thorough rinse is part of the standard operating procedure for tank cleaning. Deis, acutely aware of the potential for TCA taint, says that the winery is looking at everything from corks to cleaning procedures more carefully.[9]

Alternatives to chlorine-based cleaning/sanitizing products

Peracetic acid (PAA) is an environmentally friendly, chlorine-free, peroxide-based sanitizer used as a powerful disinfectant in many countries including the U.S. It is completely organic with no known hazardous byproducts, and it degrades ultimately to carbon dioxide and water. PAA is EPA-approved for many applications, such as milk and dairy products processing, beverage plant filling machines, and sanitation/disinfection of winery and brewery equipment. "PAA contributes no conductivity (salts) to wastewater and is available in several safe packaging options," says Long.

Other products, such as hydrogen peroxide and sodium percarbonate, can be used for sanitation but are much weaker oxidizers than PAA. Percarbonate products release oxygen very slowly (necessary to generate hydrogen peroxide) at room temperatures, thereby prolonging the cleaning process.

Andy Woehl, plant process engineer at Clos du Bois Winery (Geyserville, CA), relies on his experience using peracetic acid in the beer industry.[10] He introduced PAA for cleaning on the Clos du Bois bottling line. Multiple swab tests of operating points on the line have shown non-detectable levels of bacterial and yeast colonies after treatment with PAA. The compound is also very effective against a number of fungi, molds, algae, and viruses.

Peracetic acid is a very strong oxidizer, and winery personnel should select a supplier that has developed safe handling and dispensing systems. While PAA is not toxic, it should be dispensed in dilute form to ensure compatability with winery process

PUT YOUR WINE ON THE BEST DRESSED LIST.

SaVer
glass

SAVERGLASS, INC.
860 Napa Valley Corporate Way, Suite S · Napa, CA 94558 · Tel. 707 259 2930 · Fax. 707 259 2933
Premium Point · New Rochelle, NY 10800 · Tel. 914 636 3443 · Fax. 914 636 2332
www.saverglass.com

materials, such as gaskets, gloves, and filter aid binders. Interview your supplier to determine its capability.

With a few modifications to equipment and employee safeguards recommended by the PAA suppliers, Clos du Bois has enjoyed multiple benefits from the product. Bacteria in its wastewater treatment facility are healthier because PAA breaks down to oxygen, water, and acetic acid prior to arriving at the facility. Previously, residual chlorine in the wastewater from winery cleaning tended to destroy necessary bacteria.

Woehl reports that the bottling line is cleaner, as evidenced by reduction of bacteria in plate cultures. Clos du Bois plans to eliminate chlorine in tank and hose cleaning and is leaning toward PAA as the replacement product for chlorine.

Sodium carbonate is another non-chlorine sanitizer. Besides its use as a general cleaner, it can also be used to clean oak barrels and tanks. As with PAA, sodium carbonate is sold under several proprietary names. Readers can consult the list of suppliers at the end of this report for the cleaning and sanitizing products to meet particular needs.

Ozone has also been shown to be an excellent sanitizer. Recent improvements in the delivery systems make it safer to use, especially in confined spaces, such as barrel cellars.

Chlorine-treated products

Some products that come into the winery have been treated with chlorine. Such items as pallets, wine bins, and woods used for racks, all should be regarded as potential sources of chlorine and should be removed if found to contain chlorine.

Outside the winery

In several instances, raw wood for barrels and tanks have been contaminated during transportation in shipping containers.[13] Chlorine-containing residues from cargo previously shipped in a container could also pose a risk to unprotected wood, barrels, or other winery supplies. Again, all shippers need to be aware of these potential TCA sources, but wineries may have to request preventive procedures be used as a part of their purchase orders.

Another source could be chlorine-treated dunnage and bracing placed in direct contact with the piles of barrel staves or finished unwrapped barrels. To protect against shipping contamination, wineries should request documentation from the cooperages and shippers as to what safeguards have been implemented to guard against TCA contamination and the results of their tests for TCA. Wineries should implement their own TCA tests on barrels and supplies either as routine shipment-receiving quality control or when receiving a suspected shipment.

Shipping poses other potential sources of contamination. In one instance, the chlorine used to wash the deck of a ship was splashed on staves and heading, which were exposed in the hold of a vessel. The barrels subsequently made from this wood developed TCA and tainted the wine placed in them.[6]

Proximity

Although not as well-documented, wine in barrels that are in close proximity to TCA-contaminated items, such as corks, could become tainted, or TCA-contaminated barrels could taint corks if the cork bags are not properly sealed. Most paper and cardboard products have been bleached with chlorine during the manufacturing process. Wine in proximity to wet or moldy cardboard cases of bottles or other winery supplies could potentially become tainted with TCA.

Conclusion

Dave Cofran — a 30-year wine industry veteran, recent general manager at Silver Oak Cellars (Oakville, CA), and owner of Strata Vineyards — sums up the concern about TCA sources with a most practical idea. He suggests that wineries analyze each of their wines to "get a base line level [for TCA] before the wine goes into the bottle."[13] Wineries

WINE COUNTRY CASES, INC.

Specializing in Custom Wood Packaging for Wine

(707) 967-4805
FAX (707) 967-4807

995 VINTAGE AVENUE ■ ST. HELENA, CA 94574

E-MAIL: *boxmaker@napanet.net*

should draw a sample for analysis when the wine has been mixed in a tank just prior to bottling.

With this analysis, winemakers can monitor their cellar conditions throughout the year, and from year to year. Also, if the wine comes from a specific area in the cellar, or if the vinification included a specific process, this analysis might indicate a TCA source in those areas or processes. The analysis would also be beneficial for the future if TCA shows up in the bottle. This would indicate that the sources of the TCA were limited to the corks or bottling equipment, reducing the time and expense to investigate for the source.

The TCA problem is somewhat analogous to dealing with Brettanomyces. Minute amounts of TCA are a part of winemaking. The strategy should be to remove all forms of chlorine from the cellar in order to keep TCA contamination at minimal levels. ■

References

1. Weeks, S., and M. Sefton (1999, May-June). "Analysis of TCA in wines and oakwood." *Australia & New Zealand Wine Industry Journal*, Vol. 14, No. 3.

2. Interview with Michael Long, Napa, CA.

3. de Serdio, E. (2002, May). "TCA, probably contemporary wine's worst threat." www.reservaycata.com/ingles/press411.htm

4. Telephone interview with Duane Wall, Calistoga, CA.

5. Laube, J. (September 27, 2002). "Beaulieu Vineyard's red wine woes." *Wine Spectator*.

6. Telephone interview with Bill Dyer, Calistoga, CA.

7. Telephone interview with Jean Arnold, Sonoma, CA

8. Telephone interview with Mary Wagner, Modesto, CA

9. Interview with Ken Deis, St. Helena, CA

10. Telephone interview with Andy Woehl, Geyserville, CA

11. Chattonet, P., D. Guimberteau, D. Dubourdieu, and J. Boidron. (1994). *"Nature et origine des odeaurs de "moisi" dans les caves. Incidences sur la contamination des vins."* Journal International des Sciences de la Vigne et du Vin. Vol. 28. No. 2. pp. 131–151.

12. Email correspondence with Peter Godden, Australian Wine Research Institute.

13. Interview with Dave Cofran, Napa, CA.

Sources for chlorine-free cleaning and sanitizing products:

Lancer, a peracetic acid cleaner and sanitizer available from: Heritage Systems, 986 Kaiser Rd. Napa, CA 94558, tel: 707/258-0553, www.heritagesystemsinc.com.

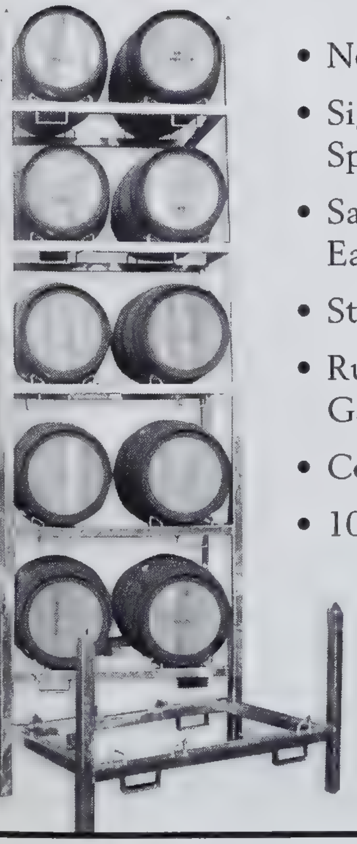
ProxyClean, sodium carbonate peroxyhydrate based, available from: Barrel Builders, PO Box 268, St. Helena, CA 94574, tel: 800/365-8231, www.barrelbuilders.com.

TSP and sodium percarbonate available from Napa Fermentations, 575 3rd St., Napa, CA 94559, tel: 707/255-6372, www.napafermentations.com.

Quaternary ammonia available from Crawford Enterprises, PO Box 912, Meadow Vista, CA 95722, tel: 530/637-1090, www.cleanjim.com.

Henry Work, Management and Cooperage Consultant. Email: hwork@sbcglobal.net. Cell phone: 707-478-2834.

Self-Supporting Barrel Rack
Barrel Master
Made in USA • ISO-9001 Certified • Patent Pending



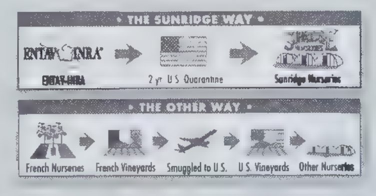
- No Weight on Barrel
- Significant Labor and Space Savings
- Safe, Stable and Earthquake Resistant
- Stacks 8 Barrels High
- Rugged, Hot-Dipped, Galvanized 2-1/2" Steel
- Certified Design
- 10 Year Warranty

John Falland
Australia
"Setting Standards Since 1961"
www.jfallandaust.com.au
(707) 526-7567

Where will you get *your* clones?

Sunridge uses authentic clones direct from the ENTAV repositories in France.

Other nurseries use non-certified French clones brought in illegally. With Sunridge Nurseries you get the real thing. Get the Real Cab Sauv 15 and the Real Syrah 877! Our new introductions include: Pinot 943, Sauv Blanc 297 and Cab Franc 212. ***Sunridge delivers CDFA Grade #1 quality certified bench grafts.***



SUNRIDGE NURSERIES
Legal! Authentic! Guaranteed!

For more information, call 661-363-8463 or visit http://www.sunridgenurseries.com.
Sunridge® Nurseries, Inc., 441 Vineland Road, Bakersfield, CA 93307

Take care of your equipment: Pre-harvest maintenance basics

BY Tina Vierra

Every winery, like every car owner, knows they have to do routine and annual maintenance if they want equipment to last longer and perform properly. But the reality is that with one thing and another, not every needed maintenance is performed, and hitches during harvest and crush happen.

PWV contacted equipment suppliers for a "checklist"; a rundown of typical maintenance needed on the machinery most crucial to a winery during harvest. Here are the results — match them to your equipment and provide the attention necessary!

Presses

Shut off the electricity supply to the press before performing any maintenance. Neglect of such a simple step can and has led to worker injury.

Before harvest

- Check for blockage in the motor which drives the drum of the press. If the brake discs are stuck, turn the manual release screw for the brake, gradually until the motor is released. Once this is done, bring the manual release screw back to its initial position. Some presses have a side lever that simply has to be pushed.
- Run a pressure test of the membrane to check for leaks. Take the press through a cycle at the maximum pressure and hold it for 8–10 minutes while watching the pressure gauge and listening for air leaks. You may notice a slight pressure drop which is common. It's better to replace or patch a membrane before crush.
- Clean the filter elements in the compressor's suction line, and the cooling grooves, by blowing compressed air (optional).

During harvest

- Clean the wire gauze of the air filter strainer weekly. Blow compressed air from the clean side to the dirty one, wash it with a suitable solvent, or replace it with a clean one.

After harvest

- Clean the control panel with a damp cloth and close its protective cover before washing the rest of the press.
- Thoroughly clean the press, from top to bottom with warm water (maximum 100°F). Pay close attention to cleaning the drum inside and out, the vats, and the infeed and discharge lines (pipes and hoses).
- Protect the electrical equipment from humidity by using silicon spray formulated for the purpose.

- Grease the front and rear supports of the drum. Grease the drum's drive chain. Grease the door tracks (with food-grade grease). Check and tighten the drive chain;
- Clean the wire gauze on the vacuum pump;
- Check and replace any plug-in relay switches;
- Remove and check the pressure switch diaphragm on the axial feed line.

Automatic punch-down fermentation tanks

Safety: Shut off the electricity supply before performing any maintenance.

Before harvest

- Clean the lubricator-reducer filter in the pneumatic system, and check oil level;
- Using the sight gauge, check oil level in the geared motor;
- Carry out a trial run to verify that everything is working properly;
- Release the pushers if they are still attached to the rings.

After harvest

Safety: Turn the main switch to zero and lock it in position before washing the machine. Failure to do this can lead to operators coming into contact with the fins and being crushed by them.

- Disconnect the main switch;
- Clean the control panel with a damp cloth and close its protective cover;
- Thoroughly clean the machine, from top to bottom, with suitable detergents;
- Protect the electrical equipment against humidity using a silicon spray formulated for the purpose;
- Move the pushers up and attached them to the rings.

Destemmer

Safety: Shut off the electricity supply before performing any maintenance.

Before harvest

- Lubricate beater shaft bearings, screen cage shaft bearings, and roller bearings, using only edible fats;
- Check for wear on the beater shaft bearing. The circumference gauge must be uniform (ovalization of less than 2mm) or be replaced;
- Check for wear or breakage of the beater paddles;
- Check the tension of the beater shaft chain; tighten if slack;
- Check for wear on screen cage guide rollers;
- Check oil level in the reduction unit of the beater, and top up if necessary.

Recommended: Only specialized or qualified personnel should perform operations requiring the alteration of the electrical circuit or replacement of mechanical parts. Contact manufacturers or distributors for technical assistance.

When It Comes To Fermentation, Quality Is All That Matters.

Quality and innovation is what Chr. Hansen is all about. From bacteria, to lysozyme and yeasts, Chr. Hansen is the preferred name throughout the major wine producing regions of the world.

For products that work and are backed by sound science and application knowledge, you can trust Chr. Hansen.

For a source of Chr. Hansen products, full technical support and outstanding customer service, you can trust Gusmer*Cellulo.*

For more information on the complete line of Gusmer*Cellulo* products, contact your local Gusmer*Cellulo* sales office below or reach us on line at **www.gusmercellulo.com.**

CHR HANSEN

Viniflora® oenos – Direct addition malolactic bacteria for red and white wines

Viniflora® CH16 – Direct addition malolactic bacteria for high alcohol red wines

Viniflora® CH35 – Direct addition malolactic bacteria for white wines

Lactizyme – Lysozyme for the control of lactic acid bacteria

RUBY.ferm and **NOBLE.ferm** – Premium strains of yeast

GUSMER*CELLULO*
GUSMER ENTERPRISES, INC
Service with Knowledge™

East Coast
1165 Globe Avenue
Mountainside, NJ 07092-0129
Phone: (908) 301-1811 Fax: (908) 301-1812

West Coast
81 M Street
Fresno, CA 93721
Phone: (559) 485-2692 Fax: (559) 485-4254

E-mail: sales@gusmercellulo.com

After harvest

Safety: Shut off the electricity supply before performing any maintenance.

- Unscrew the cleaning hatches and use a power hose with tap water to wash the screen cage, beater shaft, and rollers;
- Replace any worn or damaged beater shaft paddles;
- Replace any worn or damaged screen cage guide rollers;
- Reset the trips on the cut-out switches.

Pumps, general

Safety: Shut off the electricity supply before performing any maintenance.

Before harvest

- Check wear and tear of the belts;
- Check the fins of the rotor mechanism;
- Check the mouths of the machine, open-and-close mechanisms;
- Check the screw closings on the motor block, pump body, and support legs;
- Check wear and tear on the pipes;
- Repair or replace any worn or broken parts.

Recommended: Only specialized or qualified personnel should perform operations requiring the replacement of mechanical parts. Contact manufacturers or distributors for technical assistance.

After harvest

- Clean the body of the pump thoroughly with water.

Piston pumps

Safety: Shut off the electrical supply to the machine before performing maintenance.

During harvest

- Check the lever is completely forward or completely back before starting the pump;
- Check the motor oil level before starting each season. Always change the oil after the first year of use and at least every other year thereafter;
- After first 20 hours of operation, check tension of the belt(s) and tighten to register if necessary;
- If the pump does not suck, disassemble the body to get to the valves and check for any foreign bodies blocking them;
- If the pump's suction is poor, check the slack in the inversion cone and screw the register until the lever offers a little resistance during inversion work;
- Alternately if suction is poor, screw the cylinder cover to control the piston (for inversion in two-cylinder pumps);
- If changing the electrical current to the pump, invert the terminal board and replace the electro-magneto switch.

Flexible impeller pumps

Safety: Shut off the electrical supply to the machine before performing maintenance.

Regular upkeep of the electric pump increases the duration and security of the functions. Once each year, you should inspect the apparatus (transmission belt, rotor, and screws.) Periodical inspections should cover:

- wear and tear of the belts (most of this type of pump are motor-driven, but a few models are available with belts);
- fins of the neoprene rotor;
- mouth-closing during inactive period;
- screw closing of the blocking motor and pumpbody on the support;
- be sure the pipes are not damaged or worn and torn.

Rotary lobe pumps

Safety: Shut off the electrical supply to the machine before performing maintenance.

Before harvest

- Oil should be emptied and replaced after the first 150 working hours, then every 2,500 working hours thereafter;
- If the pump is in constant use at temperatures at or above 190°F, lubricate the bearing housing with high-viscosity oil, and replace it every 1,000 working hours;

Search and rescue weed control is a phone call away.

Do you have big weeds?

So the herbicide failed you again. Maybe it just left behind a bunch of those really hard to kill weeds. You were too busy this spring to call us. We understand. Weed Badger® is here to help with your search and rescue operation. The Cyclone Spade is always ready and willing to slice and dice some big, nasty, weeds. Call us today.

WEED BADGER®
5673 95th Ave SE
Marion, ND 58466 USA

Phone (701) 778-7511
24 Hour Fax (701) 778-7501
e-mail weedbadg@drtel.net
Call 1-800-437-3392
or visit our website at
www.weedbadger.com

- Check that mechanical seals are lubricated and watch for signs of leakage. Any leakage due to surface wear means replacement of the entire seal, including turning ring and lip ring on any auxiliary seals;
- Check for wear on the seals. Wear on a seal can lead to grape product entering the bearing housing;
- Check the pressure on the pump outlet. If at or exceeding 10 bars, mechanical seals may need to be balanced;
- Check the packing glands. Initial adjustment is performed when the pump is installed at the winery, and again after the first few operating hours. After that, when the dropping loss gets too high and further tightening is no longer possible, the packing rings and shaft protection mechanism may need replacing;
- Check the lip seals and tighten if needed;
- Check and clean the rotor case; look for seized rotor blades and any product clinging to the mechanisms;
- Check the bypass valve for blockage;
- Check the timing gears to make sure rotors are not allowed to touch, and replace if worn;
- Check the shafts for stiffness and replace any worn bearings.

During harvest

- Check the oil level every day during use. Oil must always be completely filled, with the pump turned off, before resuming use;
- If the pump is being using in vertical position, remember to invert the plug position with the oil level;
- If the product is subject to drying easily or crystalizing or decanting, the body of the pump and piping system must be washed at the end of each work session or long pause in the work;
- If the pump has reversible pumping action, this can be used at the end of a session to empty the discharge piping;
- At any pause in the work, if the product is subject to congealing or solidifying, check for blockage in the pump body and piping;
- At any long pause in a work session, check for blockage on the seals by hand-turning the pump shaft.

After harvest

- Clean body of the pump of all product with water.

Progressive cavity pumps

Safety: Shut off the electrical supply to the machine before performing maintenance.

- When new, fully lubricate all parts during assembly and check for any blockage;
- Regularly check all electrical connections;
- Regularly check the mechanical seal for leakage and wear;
- The rubber inside the stator is not removable — keep pump parts properly lubricated so that the rotors do not shear the rubber stator.

Recommended: Only specialized or qualified personnel should perform operations requiring the alteration of the electrical circuit or replacement of mechanical parts. Contact manufacturers or distributors for technical assistance.

Recommendations and available support

Wineries will have varying schedules and needs for maintenance, but some tips are universally useful. Cellarmaster Joel Rabune at Taft Street Winery (Sebastopol, CA), cleans and checks all equipment after each harvest. Then he stores and covers it all, with nothing to do but dust it off, sanitize and briefly check it over about two weeks before the first grapes arrive.

Rick White at Collopack Solutions (Napa, CA) agrees with this timing. "It's much better to address the machines right after harvest while any problems that arose are still fresh and won't be forgotten."

The suppliers who helped with this checklist stress that not many wineries have personnel who can perform the

creative
experienced
responsive
resourceful

PackagingARTS is an established leader in the production of award winning packaging and point-of-sale materials for the wine industry.

We combine imagination, technology and experience in the creation of packaging and promotional materials with the uncompromising quality this industry demands.

PackagingARTS

California:
700 Walnut Avenue
Mare Island, CA 94592
t 707.562.2787
f 707.562.2797

Colorado:
32052 Horseshoe Drive
Evergreen, CO 80439
t 303.674.2553
f 303.674.2574

www.packagingarts.com

HERITAGE SYSTEMS

Delivering Liquid Solutions™

We are an industry leader in providing chlorine-free, environmentally friendly cleaning and sanitizing product. Eliminate TCA POTENTIAL!

We offer environmental services which include sampling and compliance reporting for wastewater ponds.

Our patent-pending PondSentry™ aeration control technology saves tens of thousands of dollars per year in aeration electrical costs with no capital expenditure.

We install and maintain chemical storage and delivery systems without capital costs.

We deliver PH adjustment and nutrient addition chemistries to ensure proper operation and compliance of your wastewater systems.

CALL US
707.258.0553

Visit us @ www.heritagesystemsinc.com

hazardous and detailed annual maintenance required for most harvest and crush machinery.

Collopack Solutions has an annual maintenance program for customers. Their factory technicians subject equipment to all of the inspections mentioned in this report, and more, looking at almost 60 different aspects of the machines, and providing customers with a six-page report of recommendations.

"We strongly encourage customers to maintain all equipment in good working order. For processing equipment which is in service during the relatively short but often intense harvest period, this is especially important," says White.

Euro-Machines makes free pre-harvest service visits to its Europress and Rieger tank customers in the first two years of ownership, checking equipment and training winery staff on routine maintenance and safe operation of the machines.

"Regular cleaning and lubrication every 8 to 10 hours of operation is the only expectation on our destemmer-crushers, pumps, and presses," notes Matt Eiser of Euro-Machines. But the company stresses thorough annual checks of machinery and has 24-hour hotlines for technical support of maintenance issues, replacement of damaged, worn, or broken parts.

Bill Hernandez and the KLR Machines staff send out an annual reminder each February to all equipment customers, hoping that wineries will see the need for full maintenance of their machines well before harvest and schedule early.

Bruce Scott (Scott Laboratories) recommends a cost-effective maintenance contract in many cases with winery clients. "Wineries vary greatly in use and therefore so do wear patterns on their machinery. Not a simple one-size-fits-all circumstance. Some wineries have good maintenance staff and some none at all," Scott finds. "Machinery maintenance recommendations consequently are very general, while 'must-function' equipment like presses is very complex machinery."

SpringerOenologie

The world of Yeast Products !

Distributed by :
American Tartaric Products Inc
12030 Shiloh Rd - WINDSOR, CA 95492
Tel. (707) 836-6840
Fax (707) 836-6843
e-mail : atp@americantartaric.com

Many wineries keep presses 10 to 20 years, notes Scott, while technology continues to evolve and spare parts become tricky to make or find. The company maintains an annual maintenance program for its Willmes press clients for just these reasons.

Valley Pipe & Supply encourages their customers to make maintenance plans early, in case parts need to be ordered, technicians scheduled, or the machine needs to go in to the fabrication/machine shop to be worked on. "Our Defranceschi clients receive a service maintenance agreement each year around March," says Mitch Long. "This gives them the opportunity to have one of our factory-trained technicians arrive well before crush to do the standard maintenance and check for any problems." Other Valley Pipe equipment can easily be checked during the scheduled Defranceschi call also, and during the crush season, technicians are on call 24 hours, seven days a week.

PWV recommends that wineries use this report as a very general guideline only, look to manufacturers' literature for details of maintenance particular to their equipment, and schedule an annual maintenance visit by a professional technician well in advance of harvest. ■

Resources:

Rick White, ColloPack Solutions, 562 Technology Way, Napa, CA 94558; tel: 707/258-3940; fax: 707/258-3949; website: www.collopack.com.

Matt Eiser, Euro Machines, Inc., 4950- E Fulton Dr., Suisun City, CA 94585; tel: 707/864-5800; fax: 707/864-5879; website: www.euromachinesusa.com.

Bill Hernandez, K L R Machines, 350 Morris St., Ste. E, Sebastopol, CA 95472; tel: 707/823-2883; fax: 707/823-6954; email: klrmach@pacbell.net.

Bruce Scott, Scott Laboratories, 2220 Pine View Way, Petaluma, CA 94952; tel: 707/765-6666; fax: 707/765-6674.

Mitch Long, Valley Pipe & Supply, Inc., 1801 Santa Clara Rd., Fresno, CA 93721; tel: 559/233-0321; fax: 559/233-1713; email: valleypipesupply@aol.com.

Moving?

Be sure to notify *Practical Winery & Vineyard* of your new address, write to:

PWV, 58 Paul Drive,
Suite D
San Rafael, CA 94903

The fact that it gets there perfectly should be a given, not a cause for celebration.
Don't take chances.
Trust ThermoSafe®

When you're shipping distinctive wines, you know that your customers have a fine eye for detail and expectations of excellence. The last thing they want—or you need—is having your product arrive in less than perfect condition.

Leaders worldwide—from the vineyards of Sonoma County to Seville, and throughout the gourmet gift market—choose ThermoSafe when it comes to meeting their critical packaging needs.

The thermal packaging specialists at ThermoSafe offer an extensive line of wine, champagne and magnum bottle shippers. ThermoSafe gourmet beverage shippers are in-stock and ready to ship directly from California and Chicago, by the case and by the truckload!

No matter what your transport troubles, your protective requirements or your temperature concerns, there's only one name to remember: ThermoSafe.

SCA Packaging North America
ThermoSafe Brands
p 866-484-4394
www.thermosafe.com

SCA

Contact us for a new, expanded catalog.

Total cost analysis of wine closures

BY **Tom Atkin, PhD & David L. Sharp**
Sonoma State University
Rohnert Park, CA

What type of wine closure will deliver the most customer satisfaction? As the technology of alternative closures improves, wineries are faced with the decision of how to best protect the unique characteristics of their wines while still delivering the experience and the ambience that customers desire.

An important tool for making this type of decision is a Total Cost of Ownership (TCO) analysis. TCO analysis is an approach to understanding the costs associated with a purchase beyond (but including) price. It thus considers costs such as product failure, additional equipment, quality assurance, and disposal.

Both quantitative and qualitative cost factors are included because the lowest price does not always yield the lowest ultimate cost and satisfactory performance.

Interest in TCO has increased due to recent trends in the wine industry such as the drive toward higher quality, supply base reduction, and increased global competition. A primary motivation for using TCO is to help make product decisions that will enable the winery to offer customers the value they desire. It is also an effective technique for analyzing the impact of a product change or to compare the efforts of competing suppliers.

A value-based TCO model combines cost data with other performance data that is often difficult to quantify. Traditional accounting systems often don't track the type of information used in TCO, such as percentage of defects and cost of inspection. TCO is an attempt to dig into these types of cost factors and include them in the decision process.

Other elements that contribute to a TCO analysis include delivery charges, warranty service, acquisition costs, and costs associated with poor quality. The costs of poor quality include inspection, reworking, and testing programs. The Intel pyramid is a good example of a system that includes factors in addition to base price. Factors at the top of the pyramid are the easiest to identify and quantify while factors at the bottom are the most difficult. (See Figure I.)

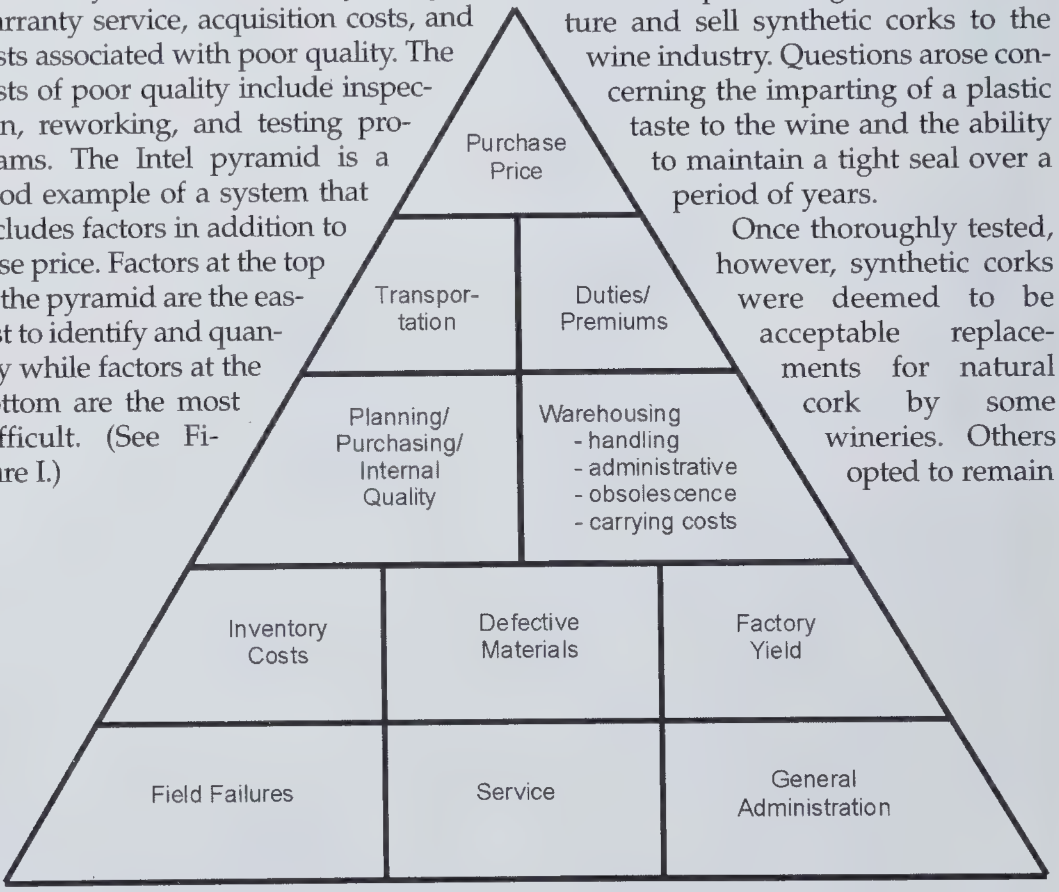


Figure 1: Intel Cost Pyramid

Corks and alternative closures

For centuries, cork was really the only closure available for winemakers producing fine wines. In the 1980s, winemakers began to pin down the origin of a problem that had long plagued a small percentage of bottled wines. It was a taint that could affect the taste of the wine. At its lowest level, the taint mutes the fruity flavor and aroma of the wine. At higher levels, it can cause an outright moldy smell similar to wet cardboard.

One source of the taint was determined to be a chemical compound known as 2-4-6 Trichloroanisole (TCA). TCA can enter cork material sometime between cork harvest and bottling of the wine. TCA can be present on the trees. Cork is not the only source of TCA contamination. It was further discovered that mere parts-per-trillion (ppt) of 2-4-6 TCA were enough to affect wine taste.

One alternative to the taint problem was the invention of a synthetic closure that mimicked cork in its ability to seal a bottle of wine while avoiding TCA contamination. Beginning in the 1990s, several companies began to manufacture and sell synthetic corks to the wine industry. Questions arose concerning the imparting of a plastic taste to the wine and the ability to maintain a tight seal over a period of years.

Once thoroughly tested, however, synthetic corks were deemed to be acceptable replacements for natural cork by some wineries. Others opted to remain with the traditional closure, mainly due to the aesthetic preferences of consumers.

Another alternative to cork closures gained interest in the late 1990s. Following the lead of a group of Australian wineries that have used them since 1976, some domestic wineries began utilizing Stelvin long-skirt screw caps.

In the U.S., screw cap closures have been generally associated with large jugs of generic burgundy, chablis, and other low-price wines. Even though modern screw caps can preserve the freshness of bottled wine, wineries fear consumer resistance in the U.S. Only a few pioneering spirits in the domestic industry have been willing to risk their reputation on this non-traditional closure.

Quantitative cost considerations

The goal of this analysis is to provide a total cost comparison for various closure alternatives so that wineries can utilize a variety of cost information sources as they deliberate on the closure issue.

For comparison, our base winery produces 60,000 cases of a red wine that could be bottle-aged by the consumer for several years and would retail at a $14.99 price point. We identified four suppliers of wine bottle closures for evaluation. Two are producers of natural cork and technical cork closures (Technical cork is composed of a body of agglomerated cork pieces with a solid cork disc at each end.) One is a producer of synthetic cork closures, and the other produces screwcap closures.

Specifications were given to suppliers for our wine and we asked for their recommendation of a closure, including pricing based on our case quantity and selling price. This helped us determine the base price of the closures that appear in Table I. The recommended closures were:

- Natural cork: 45mm "extra first A" or "CA 20",
- Technical cork: 45mm "technical" or two-disk,
- Synthetic cork: 45mm extruded or injection-molded,
- Long-skirt screw cap.

We also examined other pertinent costs, such as capsules, the cost of doing quality assurance on the corks, and the cost of potential capital equipment expenditures. Below we detail how we arrived at these other costs.

Cost of Quality Assurance (QA)

A study done by Yalumba Wines Australia estimated that the winery spent $155,000 AUD on QA testing of corks for production of 10 million bottles of wine. Yalumba has embarked upon an extensive Quality Assurance program. After adjusting for exchange rates, the cost is about $0.11 per case. Calculation to determine cost was:

Per unit cost of QA: $155,000 / 10,000,000 bottles = $0.015 AUD per bottle/cork

$155,000 AUD = $86,800 US

720,000 bottles (60,000 cases) / 10,000,000 bottles (Yalumba production) = Our production is 7.2% of Yalumba production.

Therefore: $86,800 X 0.072 = extrapolated cost of cork QA = $6,249.60

Per unit cost of this QA is $6,250 / 720,000 bottles = $0.0087 per cork, or $0.11 per case.

These costs are in addition to the base price of the cork. They are split between the testing conducted prior to shipment at an independent laboratory in Portugal, lab testing upon receipt in Australia, and in-house testing at the winery. The cost of corks for bottled wine used in the testing is also included in these figures.

While we used this study from Australia to determine QA costs associated with corks, most wineries in the U.S. can't afford to implement such an extensive testing program. Many wineries consider it such a daunting task that they do not send samples to labs for independent testing. Cost and length of time to obtain results are the major reasons given for not conducting extensive laboratory testing.

In addition to visual inspection of the corks, many wineries find it reasonable to perform in-house sensory testing, soaking a sample of corks in neutral white wine followed by a sensory evaluation of the wine. It is estimated that sensory appraisal of corks can be accomplished for about 6.4 cents per case.[2]

Unit cost of capital equipment

The use of a long-skirt screwcap requires equipment other than the standard corker used by almost all wineries. We must consider the unit cost of the capper as a capital equipment investment. We determined that a Bertolaso three-head capping machine that was sufficient for the job would require about a $65,000[9] capital equipment investment. After adjusting for depreciation (five-year depreciation period) this translates to about $0.17 per case.

The Ultimate Bird Netting
Easily Applied... Easily Removed!
- Premium woven netting
- Long Life -10 year UV warranty
- Strong and durable
- 16 mm x 16 mm diamond mesh
- Increased light penetration compared to other netting
- Fruit zone netting also available

www.spectrellising.com
Spec Trellising
When Quality Counts!
(800) 237-4594

Under GAAP (Generally Accepted Accounting Principles) rules, winery equipment is depreciated over five years.

Estimated machine value after five years: $15,000

Using the straight line depreciation method:

$65,000–$15,000 / 5 years = $10,000/year depreciation

Number of closures needed for 60,000 cases = 720,000

$10,000 / 720, 000 closures = $0.014 per closure or $0.17 per case

It should be noted that the capping machine has an expected useful life of 10 years. After the five-year depreciation, the $0.17 per case cost is eliminated.

Bottle premium

Until 2003, the only bottle with a neck finish compatible with the Stelvin screwcap closure had to be imported from France. This resulted in an additional expense of about $2.00 per case over a standard cork finish bottle available in the U.S.

Ball-Foster is now offering a domestically-produced bottle with a screwcap neck finish. For a 750ml standard Claret bottle, the upcharge is about $.02 per case. The price for the standard cork finish is about $6.35 per case versus $6.37 per case for the screwcap finish. Additional domestic suppliers of the screwcap finish expect to be in production soon.

Component Cost Model Chart

In Table I, natural corks are the highest cost alternative, due to base price and Quality Assurance expenses. Synthetic corks are the lowest cost way to seal a bottle. Screwcaps are slightly more expensive than synthetic cork, mainly due to equipment costs.

Natural Cork: $0.29 per closure or $3.48 per case

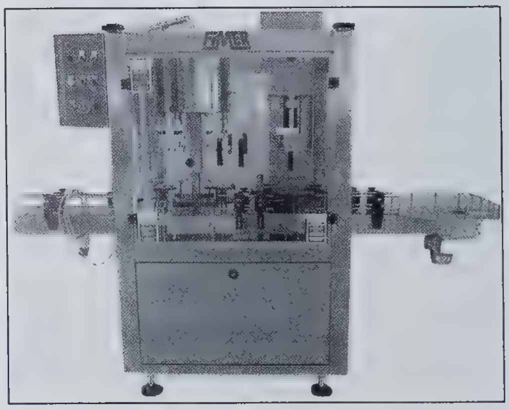
Natural Cork: $0.22 per closure or $2.64 per case;

Table 1: Price and other cost comparisons

Suppliers:	Supplier A Natural Cork	Supplier B Natural Cork	Supplier B Technical Cork	Supplier C Synthetic Cork	Supplier D Screw Top Closure
Per case					
Price per case	$3.48	$2.64	$1.02	$0.96	$1.32
Other costs/case:					
Inspection / QA	$0.11	$0.11	$0.11	$0.00	$0.00
Capsules	$0.48	$0.48	$0.48	$0.48	$0.00
Capital Equipment Investment					$0.17
Total per case (Price + OC)	**$4.07**	**$3.23**	**$1.61**	**$1.44**	**$1.49**
Per unit					
Price per unit	$0.29	$0.22	$.085	$0.08	$0.11
Other costs/unit:					
Inspection / QA	$0.01	$0.01	$0.01	$0.00	$0.00
Capsules	$0.04	$0.04	$0.04	$0.04	$0.00
Capital Equipment Investment					$0.014
Total per unit (Price + OC)	**$0.34**	**$0.27**	**$0.135**	**$0.12**	**$0.12**

BULLDOG PUP
THE ORIGINAL GAS PRESSURE RACKING WAND
Extremely Clean Rackings
Superior – Sanitary
Durable Design
OPTIONAL ATTACHMENTS
🐾 Foot Valve
🐾 Flex Leg
🐾 Top Dog
DON'T SETTLE FOR A MUTT!
Bulldog Manufacturing
P.O. Box 356 San Luis Obispo, CA 93406
Ph 805.541.3083 Fax 805.544.6181
www.bulldogmfg.com
email: pups@bulldogmfg.com

CRIVELLER COMPANY
The right alternative for your winery equipment
The SMALLEST MONOBLOC specifically designed for wineries of up to 3,000 cases/year
Ask for a quote!



West Coast USA: 10350 Old Redwood Hwy., Windsor, CA 95472
Ph: (707) 838-2222 • Fax: (707) 838-2242
East Coast USA: P.O. Box 162, Lewiston, NY 14092
In Canada: 6935 Oakwood Dr., Niagara Falls, ON L2E 6S5
Ph: (905) 357-2930 • Fax: (905) 374-2930
Email: info@criveller.com • Website: www.criveller.com

Technical Cork: $0.085 per closure or $1.02 per case;

Synthetic Cork: $0.08 per closure or $0.96 per case;

Screw-top: **$0.11** per closure or $1.20 per case.

Qualitative costs

Qualitative costs such as the cost of returned wine, replacement costs, lost sales and lost goodwill are not easy to quantify. Qualitative costs are important, however, because they often become decisive in choices between alternatives with similar dollar costs. TCO can help to clarify the tradeoffs involved in such a decision. A discussion of the major qualitative factors follows.

Consumer acceptance

In many cases, the decisive factor in a decision on closures revolves around consumer acceptance. Will the consumer react negatively to the use of an alternative closure? There is a general perception that consumers think of alternatives as cheap, usually associated with jug wines. This is based mostly on anecdotal evidence or hearsay, as very few published studies have addressed the question of consumer acceptance.

A 2002 study commissioned by the Portuguese Cork Association (APCOR) found that 73% of consumers prefer natural cork over other closures.[14] The main qualities appreciated in cork are that it is natural and traditional.

But a SupremeCorq market research study found that 67% of respondents prefer or are indifferent to synthetic closures. 92% consider synthetic closures to be "easier to open than natural cork" or "the same to open as natural cork".[15]

Tesco, the huge U.K. retailer, conducted an in-store survey that found 60% of respondents felt that screw caps are a good idea for wine. The main reasons cited were ease of opening, ease of storage, and suitability for picnics.[4]

A UC Davis survey found roughly 40% of wholesalers and 60% of retailers and restaurateurs felt that non-cork closures were an important factor to make wine more approachable.[5]

Protection from taint

One of the major functions of the closure is to preserve the flavor and unique characteristics of the wine. How good a job does each type of closure do in preserving wine? Natural cork is typically viewed as the best medium to allow proper ageing of wine. The downside, however, is that a noticeable incidence of taint is associated with the use of cork, as discussed earlier.

The Australian Wine Research Institute has initiated a study to establish the performance characteristics of cork and cork alternatives in protecting the wine. The study will continue

The proof is in the numbers...

800 million nomacorc closures this year alone.

From high volume to short-run wineries, Nomacorc® has become the preferred synthetic closure world-wide. Year-in and year-out, our roster increases. When compared to other synthetic, technical, or even bark closures, nomacorcs are "Simply a Better Closure." Nomacorc uses patented co-extrusion technology and wine know-how to create a closure that performs with greater consistency, has a realistic natural appearance, imparts no taste or smell to your wine, and offers realistic expectations for its use.

We're not just protecting tradition, we're making it better.
For an in-depth view at alternative closures,
visit us at: www.nomacorc.com

nomacorc®
"Simply a Better Closure."

©2004 Nomacorc LLC, Zebulon, North Carolina, USA

for 10 years as the segregated Semillon wine continues to age. Initial results reflecting the first 36 months of testing have been published.[6] The acceptability of the closure really depends on the style and aging of wine you are bottling. Here is an overview of key findings:

- TCA taint was a noticeable problem for both cork and technical cork but not synthetics or screw caps;
- Some closures work well for 6 to 12 months but beyond that they begin to exhibit a loss of sulphur dioxide, as evidenced by a browning of the wine and an oxidized aroma;
- The screw-capped wines retained the greatest concentration of sulphur dioxide and had the lowest rate of browning. After 18 months of storage, a rubber-like aroma developed;
- Synthetics appeared to be the least consumer-friendly in terms of the forces and energy required to extract them.

Consumer friendliness

As far as opening the bottle, synthetic corks were found to be the least consumer friendly in the AWRI study. They required more force and energy to get the bottle open. Corks are easier to remove but the customer still has to access a corkscrew.

These factors are important because ease of opening has been found to be a barrier to the purchase of wine by marginal consumers, according to The Wine Market Council. A majority (54%) of marginal consumers do not like to open the bottle for themselves.[10]

Equipment availability

The additional cost of manufacturing equipment is a barrier to the use of alternative closures. Especially for smaller wineries, this will be a hurdle as there are only a few mobile bottling operations with screwcapping ability. In 2003, Napa Wine Co. (Oakville, CA) became the first custom crush facility to offer clients the ability to bottle utilizing screwcaps.

A recent survey of wine professionals by the author showed equipment availability to be one of the major barriers to the adoption of screw caps. Corks, technical corks and synthetic corks all use similar equipment that is commonly available.

Environmental considerations

Cork is a renewable resource. The cork forest provides ecological value to the fragile ecosystems of its natural habitat. Trees flourish without the intervention of herbicides, fertilizer, or irrigation. The World Wildlife Fund asserts that harvesting cork does not cause any damage to the forests but, if demand for cork decreases, the reduction in habitat could threaten local wildlife.[7] A recycling program in the U.K. collected over one million corks in 2000.[8]

Other types of closures also possess positive environmentally friendly characteristics, although they are not made from renewable resources. The screw cap is made from aluminum that can be recycled. Synthetic corks are made from plastic resin so they have the same recyclability as other plastic products that are presently being recycled.

Cost of quality

Many of these issues are tied to winery goals in achieving a particular style and quality of wine for their customers. Dr. Joseph Juran, author of "Juran on Quality by Design," has long promoted the "cost of quality" concept. He was able to show managers that poor quality was actually more expensive than making things right the first time. Products made with high defect levels are costly to the company in terms of product that has to be thrown out, loss of future sales, shipping goods back, inspection of incoming goods, and materials consumed in destructive testing.

HOSES & HOSE ASSEMBLIES
Food Grade Rubber ▪ Silicone ▪ PVC Tubing ▪ Teflon
CUSTOMIZED HOSE ASSEMBLIES
Bevel Seat ▪ I-Line ▪ Tri Clamp
Cam Loc ▪ NPT ▪ Tube End
WE SPECIALIZE IN:
Winery ▪ Brewery
Beverage
Water Applications
Call for a free catalog today!
877-288-8644
SANITARY PROCESS COMPONENTS, INC.
3711 Vineland Road
Orlando, Florida 32811
Fax: 407-650-8944
e-mail: sales@spc-fl.com

FOR THE COMMERCIAL AND HOME WINEMAKER
ANALYZE THIS!
Individual Analyses
Alcohol · Acids · Sulfur · Sugars · etc.
Panels:
Standard · Cellar Maintainence
Harvest Panel · Juice Panel
Winemaking Supplies
Cellar Chemicals · Yeast · ML · Acids · TSP
Labware · Hydrometers · Beakers
and much more!
LWL
LODI WINERY LABORATORY
SALES AND SERVICES
400 E. Kettleman Lane • Suite 19 • Lodi, CA 95240
tel: (209) 339-1990 • fax: (209) 339-1975
website: www.lodiwinerylaboratory.com
email: lwl@lodiwinerylaboratory.com

The best option is to use methods and materials that prevent the occurrence of problems such as cork taint and oxidation in the first place. Individual wineries need a properly designed quality control program in order to assure their customers a consistently excellent product.

Cork suppliers have made strong efforts to increase the quality of their products. They have begun to vertically integrate the supply chain so that more control of harvesting and cork production can be achieved. Batches can now be tracked from the forest to the warehouse.

More sanitary processing methods and facilities have been established. The use of peroxide instead of bleach was instituted around 15 years ago, and the bark is now stored on concrete rather than dirt during curing. Suppliers now perform more testing of the cork than ever before.

Conclusion

Each winery will make its own decision on closures based on the requirements of its wine and the needs of its consumers.

At the high end, for wines that require ageing, cork is still the champion, even though the taint problem remains.

For wines that will be consumed within 18 months of bottling, the question comes down to a trade-off between the improved preservation of the wine offered by synthetics or screwcaps and consumer reluctance to accept them.

The ultimate decision will depend on how heavily wineries weigh the qualitative factors such as protection from taint, consumer acceptance, consumer friendliness, equipment availability, and environmental impact. ■

References

1. *San Francisco Business Times*, 11-25-2002.

2. Simpson and Veitch, 1993, A Protocol for the Assessment of the Incidence of Cork Taint, Australia and New Zealand Wine Industry Journal, 5, pp286–296.

3. Survey commissioned by Sabaté and conducted by Clayton Reed Associates, 1998. http://www.clayreed.demon.co.uk/.

4. www.harpers-wine.com.

5. U.C. Davis, School of Business 2002 Wine Industry Survey.

6. *Australian Grapegrower & Winemaker*, August 2001, pp 67–76.

7. BBC News, Dec 6, 2002.

8. www.corkfacts.com.

9. Collopack Solutions (formerly fp Packaging), 562 Technology Way, Napa, CA, 94558; www.collopack.com.

10. http://www.winemarketcouncil.com/research_slideview.asp?position=12.

11. James Herwatt, General Manager, Cork Supply USA, 537-F Stone Rd., Benicia, CA, 94510: tel 707/746-0353.

12. Jack Squires, Vice President, Amorim Cork America, 2557-A Napa Valley Corporate Dr., Napa, CA, 94558; www.amorimcorkamerica.com.

13. Pechiney Cork & Seal of CA, 5425 Broadway St., American Canyon, CA, 94503; www.pechiney.com.

14. www.corkmasters.com.

15. SupremeCorq, 5091 S. 226th St., Kent, WA, 98032; www.supremecorq.com.

16. Sabaté USA, 902 Enterprise Way, Ste. M, Napa, CA, 94558; www.sabate.com.

CASTORO BOTTLING CO. CBC FILLING YOUR NEEDS

California's First Mobile Screwcap Bottler!

• Three trucks to serve you • Flexible scheduling • Bottles 1,500–2,500 cases/day

Services Offered

- SCREWCAP BOTTLING NOW AVAILABLE!
- Bottle cleaning, sparging & gravity filling
- Vacuum corking & multiple head corkers
- All types of capsules including screw cap
- Pressure sensitive & wet gluing labeling
- Accommodates single or dual web spools

Established

- 20 years of hands-on bottling experience
- Supported by a winery
- Experienced bottling line technicians
- Technical support for bottling prep & packaging
- Competitive prices

On the move with Mobile Bottling!

CONTACT US:

CASTORO BOTTLING CO

Phone: (805) 467-2002 Fax: (805) 467-2004

www.castorobottling.com

St.Patrick's of Texas

Marchisio **Wine Tanks**
to 2000 gallons

Enoitalia **Crusher/ Destemmers**
exclusive USA distributor

Presses

French Oak Barrels

Pumps—introducing St. Pat's USA-made A.C. Frequency variable speed drive.

Plate Filters—Filter Sheets

Corkers—Electric with vacuum/gas $6050. Pneumatic.

Corks from Norcor of Portugal. Quality control lab reports.

Heat Shrink/Foil Spinners

Filling Machines
Vacuum and gravity

Labelers
manual and semiautomatic

Sanitary Valves/Fittings

Refractometer $47

Custom S/S Fabrication

We stock parts. Schematics and manuals online.

www.stpats.com
with on-line ordering

1828 Fleisher Dr
Austin, Texas 78728
512.989.9727

PACKAGING SHOWCASE

PRACTICAL WINERY & VINEYARD

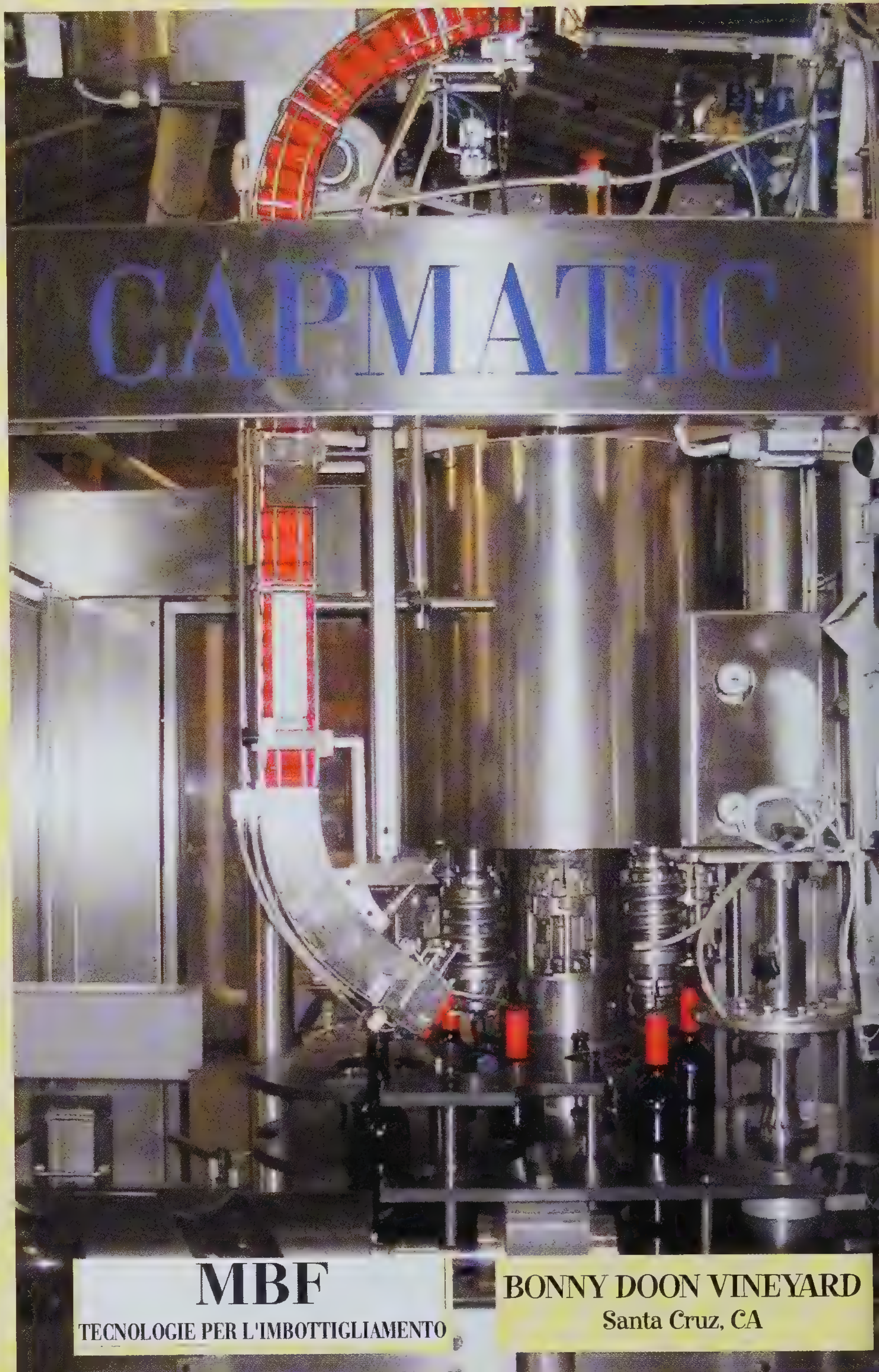
ALTERNATIVE CLOSURES

CAPSULES • CORKS • EQUIPMENT

BOTTLES • LABEL PRINTING

PACKAGING DESIGN • SHIPPERS

ABB Labels	83
Amorim Cork America	78
California Glass Co.	83
Collopack Solutions	78
Cork Supply U S A	81
Demptos Glass Co.	84
Encore!	86
Etched Images	82
Gordon Graphics	86
Lafitte Cork & Capsule	81
M A Silva Corks U S A	82
Newpak U S A	84
Nomacorc U S A	77
Packaging Arts	77
Pickering Winery Supply	84
Ramondin U S A, Inc.	77
Rivercap U S A	82
Sabaté U S A	79
Saint-Gobain Containers	81
SaverGlass	79
SCA Packaging North America	80
Scott Laboratories	83
Stanpac, Inc.	78
Supreme Corq	79
Wine Country Cases	80
WS Packaging Group	80



MBF
TECNOLOGIE PER L'IMBOTTIGLIAMENTO

BONNY DOON VINEYARD
Santa Cruz, CA

RAMONDIN USA, INC.

Ramondin has been making capsules for the wine industry since 1890. Ramondin was the first tin capsule manufacturer to receive the ISO 9001 certification, complying with strict standards of quality, safety, and service, and the ISO 14000 certificate, which has special emphasis on protecting the environment.

A new factory was designed and built to manufacture quality tin capsules. With recent innovations in decorating machines, Ramondin can create intricate designs for a lower cost. From traditional to cutting-edge design, the tin capsule identifies and protects your product.

Tin is an excellent replacement for environmentally-undesirable metals and plastics. Ramondin buys the purest tin and processes the silvery metal into a perfect closure. Ramondin's continued commitment to protecting the environment has led to development of water-based paints — no more solvents.

Recyclability is one of tin's great merits. Ramondin's recycling program encourages wineries to save plastic trays for reuse in new tin capsule orders. This is a huge project, but one that Ramondin feels is the right thing to do to reduce packaging waste and out of our landfills.

"Think green. Think Ramondin … capsules and only capsules for over 100 years."

For more information, contact:
Ramondin USA, Inc.
2557 Napa Valley Corporate Dr., Ste. G
Napa, CA 94558
tel: 707/944-2277; fax: 707/257-1408
e-mail: ramondin@ramondinusa.com

PLEASE SEE RAMONDIN AD, PAGE 3.

NOMACORC - USA/INTERNATIONAL

Nomacorc, LLC is the manufacturer of Nomacorc®, a quality, synthetic wine closure. Through aggressive research and development, the company has created a patented, co-extrusion process closure that is sensorily neutral and taint-free. Nomacorc provides a superior oxygen barrier, and increases ageability while safely preserving wine, and the wine opening ceremony.

Partnering with global wine industry leaders such as Robert Mondavi Winery, Kendall Jackson, Lindemans, Rosemount (Australia), Reh-Kendemann (Germany), Vinival, and Michael Laroche (France), among others, Nomacorc has set the standard for extraordinary closures, ensuring customer satisfaction and loyalty.

ISO/9002 certified Nomacorc closure represents 32% of the worldwide market share of synthetic wine closures. As a result of quality assurance standards, Nomacorc is approaching sales of one billion closures in 2004.

nomacorc®
"Simply a Better Closure."

"Nomacorc, LLC is experiencing phenomenal growth, projecting a 60% increase in 2004," says James Herwatt, vice president and general manager, Cork Supply USA, Inc.

Nomacorc's consistent yearly growth, proven quality, strong business alliances, and best technology practices combine to offer clients "Simply a Better Closure."

For more information, contact:
Nomacorc
505 NMC Dr., Zebulon, NC 27597
tel: 919/269-4728
e-mail: info@nomacorc.com
website: www.nomacorc.com

PLEASE SEE THE NOMACORC AD, PAGE 73.

PACKAGINGARTS

PackagingARTS

PackagingARTS, founded in 1995, is a California based firm offering graphic design and production services for package and promotional printing. Depending on need, PackagingARTS provides a spectrum of products, including: point-of-sale, displays, cartons, bags, labels, and bottle decorating.

PackagingARTS offers vibrant graphics for club store multi-pack applications, and provides an economical alternative to traditional structures with high-end graphics that shrink two or more items for value-pack promotions.

From design to fulfillment, PackagingARTS collaborates with clients and industry resources, utilizing staff knowledge and experience, to provide top-quality service.

For more information, contact:
PackagingARTS
California:
700 Walnut Ave., Mare Island, CA 94592
tel: 707/562-2787; fax: 707/562-2797
e-mail: dave@packagingarts.com
website: www.packagingarts.com
Colorado:
32052 Horseshoe Dr., Evergreen, CO 80439
tel: 303/674-2553; fax:303/674-2574
e-mail: rhswain@packagingarts.com
website: www.packagingarts.com

PLEASE SEE PACKAGINGARTS AD, PAGE 67.

STANPAC, INC.

"Packaging perfection for over 50 years"

Stanpac manufactures packaging products and sealing systems for the food and beverage industries. Stanpac is committed to providing customers with consistent, high-quality products and services by maintaining high standards for personnel, materials, and processes.

In today's crowded marketplace, an exciting and distinctive package can set your product apart from the rest. Maximizing the capabilities of state-of-the-art application equipment, Stanpac can decorate virtually any glass container using a direct-screen printing process called Applied Ceramic Labeling (ACL).

STANPAC

Bright, radiant colors can be matched to most capsules and labels, with excellent durability ideal for refillable containers, and able to stand up to caustic washes with complete scuff-resistance. Precious metal application adds elegance and beauty to your package.

Stanpac has been honored with several design awards, including a Gold Medal in the wine category at the 8th Annual Beverage Packaging Global Design Awards, a Bronze Medal for innovative ACL Label Technology at the 10th Annual Beverage Packaging Global Design Awards, and the Glass Packaging Institute Clear Choice Award for environmental packaging.

For more information, contact:
Stanpac, Inc.
PO Box 584, Lewiston, NY 14092-0584
tel: 905/957-3326; fax: 905/957-3616
e-mail: info@stanpacnet.com
website: www.stanpacnet.com

COLLOPACK SOLUTIONS, LLC

COLLOPACK
SOLUTIONS LLC

ColloPack Solutions, LLC provides the U.S. wine industry some of the world's premier lines of bottling equipment. A comprehensive range of products enables ColloPack to offer solutions for virtually every step in bottling and packaging. Manufacturers ColloPack represents include:

- **Bertolaso** — integrated bottling lines including low vacuum, gravity and counter-pressure fillers, corkers, cappers for ROPP, crown and plastic closures, bottle cleaners, microfiltration systems, bottle conveyors, and line automation,
- **Robino & Galandrino** — capsule dispensers, thermal heat shrink capsule applicators for PVC, capsule spinners for composite and tin, wirehood and champagne capsule applicators,
- **Cavagnino & Gatti** — rotary wet glue, pressure-sensitive labelers,
- **Cames** — bottle washing, cork orientors,
- **Berchi** — bottle and carton depalletizers, carton conveyors and palletizers,
- **Perrier** — sparkling wine disgorging machinery,
- **Francisco Oller** — sparkling and still wine agglomerated closures.

ColloPack is dedicated to providing every customer with superior service and support. ColloPack maintains a comprehensive local inventory of over 5,000 different parts and has a team of experienced, trained technicians for installation, start-up, and post-sales service of ColloPack's complete range of equipment.

For more information, contact:
ColloPack Solutions, LLC
Dave Means, Phil Giacalone, Rick White, Joe Mironicki, Mike Wlodarczyk, or **Greg Fulford**
193 Camino Dorado, Napa, CA 94558
tel: 707/258-3940; fax: 707/258-3949
e-mail: sales@collopack.com
website: www.collopack.com

AMORIM CORK AMERICA

Amorim Cork America is the U.S. subsidiary of Amorim and Irmaos of Portugal.

Since 1870, the Amorim family has been committed to the cork industry and is the world's largest producer of cork stoppers. Amorim operates a major research and development program, investing heavily in scientific research, laboratory testing, modernized processes, and innovation.

The latest development is ROSA, a process utilizing high-pressure steam to reduce TCA in corks by up to 85%. These results have been documented by Geisenheim and the Australian Wine Research Institute.

Amorim Cork America offers a full line of natural cork products:

For still wines, standard 24mm diameter corks in 38mm, 45mm, 49mm, 51mm, and 54mm lengths are available in two washes: BWC + or Natural.

For sparkling wines, Amorim Cork America offers the Spark® cork with disks washed by the Inos II sanitization system eliminating off aromas.

Twin Top® corks, one of Amorim Cork America's major products, utilizes Spark® cork technology (a closure with an agglomerated mid-body and an Inos II-washed disk at each end), widely accepted for its consistency of size, performance, and sensory neutrality.

Amorim has released its newest product, Nuetrocork, a micro-agglomerated closure made of ROSA-treated particles and a synthetic binder that is price-competitive while having excellent sensory values.

Amorim Cork America is a member of the Cork Quality Council. All corks are subject to GC/MS testing for TCA at ETS Laboratories prior to acceptance into inventory.

For more information, contact:
Amorim Cork America
2557 Napa Valley Corporate Dr., Ste. A
Napa, CA 94558
tel: 707/224-6000; fax: 707/224-7616
e-mail: info@amorimcorkamerica.com
website: www.amorimcork.com

PLEASE SEE AMORIM CORK AMERICA AD, PAGE 17.

SAVERGLASS

SaVer glass

The new Saverglass catalogue is out with a new selection of high-end bottles, heavy, square, round, and twist tops. The new Paradis bottle is reminiscent of the ancient bottles from Bordeaux in the 1800s. The La Baronne and Divine echo the Burgundian styles of the mid 1900s.

First to enter the twist-top market, Saverglass now has 11 molds, including two 375 ml versions. Most of the twist-top finishes have matching cork finish packages, giving wineries full marketing flexibility. There are three Bordeaux shapes; Bordeaux Ancienne, Premiere, and Classic; a Burgundy Grand Millesime; Altuse flutes in either 375ml or 750ml, and a standard flute. All are available in both cork or twist-top finish.

Saverglass continues to lead the way in design, color, silk-screening, decaling, and tampography.

A new showroom is available as a training center for glass production appreciation. Please call for an appointment to view an interactive kiosk. The kiosk demonstrates the services and manufacturing methods Saverglass provides worldwide. For further updates at the factory, please visit Saverglass on the web at www.saverglass.com.

For more information, contact:
Saverglass
Sales Contacts: **Erica Harrop**, Vice President, sales & marketing; **Jennifer Larmie**, packaging representative; **Sylvie Langlois**, packaging representative, **Jyll Castagnia**, sales support.
860 Napa Valley Corp. Way, Ste. S
Napa CA 94558
tel: 707/259-2930; fax: 707/259-2933
website: www.saverglass.com

PLEASE SEE SAVERGLASS AD, PAGE 61.

SABATÉ USA

Sabaté USA offers a diverse portfolio of innovative, top-quality cork and cork-based closure solutions to winemakers, including natural corks, now finished in its state-of-the-art facility in Napa, CA. The company is also launching its new DIAMOND-processed closure (TCA extraction by supercritical CO_2) with improved permeability. In addition to its Diamond wine closures, it also offers a line of cork composite corks (Altec, Evolution, and Reference), one-plus-ones, Altop bartops, and Sibel sparkling wine corks.

Based in the south of France, Sabaté SAS controls production from the forest to the bottle, ensuring quality control that meets the high standards of the ISO 9002 certification. The company employs advanced Solid Phase Micro Extraction / Gas Chromatography / Mass Spectrometry (SPME/GC/MS) testing as part of its quality assurance program.

SABATÉ

Sabaté USA is a division of GROUP OENEO, a world leader in oak barrel making for fine wine and second in the world for the wine closure sector.

For more information, contact:
Sabaté USA
902 Enterprise Way, Ste. M, Napa, CA 94558
tel: 707/256-2830; fax: 707/256-2831
e-mail: sabateusa@sabate.com
website: www.sabateusa.com

PLEASE SEE SABATÉ AD, PAGE 28.

SUPREMECORQ

Since 1992, Supreme Corq has been regarded as a market-leading synthetic closure. Supreme Corq is the only synthetic closure company to achieve ISO 9001:2000, AIB (American Institute of Baking), and BRC (British Retail Consortium) quality certifications.

SupremeCorqs come in three sizes: 45mm, 38mm, and T-Top. All are recyclable and comply with FDA and EU regulations. Proprietary technology has resulted in more than 15 patents worldwide.

SupremeCorqs, available in all colors, greatly enhance wine packaging. Printing capability is unmatched worldwide, and FDA-compliant inks do not rub off.

SupremeCorqs are injection-molded with superior food-grade thermoplastic elastomeric materials using the highest quality molds. The outer skin completely seals the closure, protecting the internal cell structure and preventing wine absorption.

Produced under the strictest ISO guidelines, SupremeCorqs have passed many tests for structural integrity and oxygen-barrier ability, are neutral, do not impart flavor or support microbial growth, and will not crumble in bottles or chip on production lines.

Each SupremeCorq is quality-tested for many characteristics, including density (length, weight, diameter), coating consistency, and insertion/extraction force, to ensure optimum product performance.

SupremeCorqs form a near-perfect seal so leakage, evaporation, and musty off-flavors caused by tree-bark cork closures are virtually eliminated. SupremeCorqs can be used easily on your existing bottling line. Wine bottles can be stored in an upright position.

More than 1,200 winemakers worldwide use SupremeCorqs to preserve their wines exactly as they intended.

For more information, contact:
SupremeCorq
5901 S 226th St., Kent, WA 98032
tel: 253/395-8712; fax: 253/395-8713
website: www.supremecorq.com

PLEASE SEE SUPREMECORQ AD, PAGE 29.

WINE COUNTRY CASES, INC.

Wine Country Cases (WCC), is a manufacturer of custom wood packaging for the wine and food industries. Founded in 1988, WCC services include design and manufacture of all types of wooden wine packaging including:

- Traditional six- and 12-bottle boxes,
- Gift boxes,
- Display boxes,

To complement the packaging produced, the following processes are available to further enhance the package:

- Hot branding — a process that, by heat and pressure, brands logos and artwork into wood components;
- Foil stamping — introduces colored foil into the image, while utilizing the same process as branding;
- Silk screen printing — a process that allows multiple colors to be reproduced.

WCC also produces custom manufactured foam shipping assemblies for all wood boxes, allowing package shipment without further handling of the product.

Small minimum quantities and short lead times make wood packaging a cost-effective alternative for most marketing and sales objectives.

For more information, contact:
Wine Country Cases, Inc.
995 Vintage Ave., St. Helena, CA 94574
tel: 707/967-4805; fax: 707/967-4807
e-mail: boxmaker@napanet.net

PLEASE SEE THE WINE COUNTRY CASES AD, PAGE 62.

SCA PACKAGING NORTH AMERICA

Protect one to 12 bottles of wine, champagne, and larger-size magnum bottles with a complete line of shippers from ThermoSafe Brands. ThermoSafe® Wine Shippers are molded from lightweight, durable EPS (expanded polystyrene) that snugly fit bottle necks and bodies. Shippers are specifically designed to handle rigorous transport environments. Sturdy containers are precisely designed; assuring each bottle arrives safely; EPS construction minimizes shipping costs and hassles.

ThermoSafe Brands offer ***standard*** wine shippers that accommodate 750 ml bottles and ***universal*** shippers for other 750 ml bottles and sparkling wine bottles. Wine shippers are available in top loading or lay down styles and hold one, two, three, four, six or 12 bottles.

Gift packs are available in green and white shipping cartons that can be custom-printed with a company logo.

Ship 750 ml champagne or oversize bottles in one or 12-bottle top-loading ***champagne*** shippers.

ThermoSafe Brands also offers top-loading ***magnum***-size shippers for 1.5 L bottles to hold one, two, four, or six bottle shipments.

Wine shippers are in-stock, FedEx-approved, and ready for shipping by case or truckload.

For more information, contact:
SCA Packaging North America
ThermoSafe Brands
3930 Ventura Dr., Ste. 450
Arlington Heights, IL 60004
tel: 847/398-0110, or toll free: 800/323-7442
fax: 847/398-0653
website: www.thermosafe.com

PLEASE SEE SCA PACKAGING NORTH AMERICA THERMOSAFE BRANDS AD, PAGE 69.

WS PACKAGING GROUP

WS Packaging Group (San Luis Obispo, CA), is a printing industry leader with a reputation for quality and service second to none. Founded in 1949 as Blake Printery, the company has grown to become one of the largest and most respected businesses on the central California coast. WS Packaging Group, Inc. headquartered in Algoma, WI, acquired Blake Printery in 2002. Prior to this acquisition, WS Packaging Group was involved in a joint venture with Blake, creating CALabel, a flexographic division operating within the Blake Printery facility.

WS Packaging Group, Inc.
Leaders in Printing and Packaging Worldwide

In addition to wine label production, the San Luis Obispo location provides WS Packaging Group a west coast presence, additional capacity, and a high-end production facility.

WS Packaging Group offers a specialty in the production of ultra-high-end wine labels, meeting discriminating winery demands with exact color matching, tight registration, metallic foil application, sculptured embossing, intricate die-cutting, hexachrome color process, and just-in-time delivery.

WS Packaging is one of the few label printers offering both pressure-sensitive *and* sheetfed glue-applied labels from the same facility, utilizing flexographic, offset, and web-offset production.

WS Packaging continually earns national label awards for quality from the Tag and Label Manufacturers Institute and the Flexographic Technical Association.

For more information, contact:
WS Packaging Group
2222 Beebee St., San Luis Obispo, CA 93401
tel: 800/234-3320; fax: 805/543-2982
e-mail: rramos@wspackaging.com
website: wspackaging.com

PLEASE SEE WS PACKAGING AD, PAGE 46.

LAFITTE CORK & CAPSULE, INC.

Lafitte Cork & Capsule, Inc., is one of the leading companies in California supplying natural corks and quality capsules.

Lafitte Cork & Capsule is a subsidiary of Lafitte Industries along with Lafitte Cork Portugal, an ISO 9002-certified cork manufacturer producing and distributing more than 400 million corks annually around the world.

Extensive quality control procedures and an on-site $4 million inventory make Lafitte one of the most reliable and competitive cork suppliers in the industry.

Lafitte capsules are produced in France by C.M.E. (Coliege Metalco Emballage). These are high quality PVC, tin, or polylam capsules, which offer unique printing reproduction, such as nine-color decorated PVC capsules.

In addition, an all-metal ECOCAP capsule provides the performance of tin capsules with 20% cost savings.

For more information, contact:

Lafitte Cork & Capsule, Inc.
45 Executive Ct., Napa, CA 94558
tel: 707/258-2675; fax: 707/258-0558
e-mail: brucker@lafitte-usa.com
website: www.lafitte-usa.com

PLEASE SEE LAFITTE CORK & CAPSULE AD, PAGE 43.

SAINT-GOBAIN CONTAINERS

As a leading glass supplier to American wineries, Saint-Gobain has a legacy of product innovation, craftsmanship, and customer attention that spans two continents and three centuries.

After more than 300 years as one of Europe's premier bottle makers, Saint-Gobain started in America in 1995 as Ball-Foster Glass, an entity formed from the union of two U.S. companies, each with more than 100 years of distinguished glassmaking experience. Today, Saint-Gobain Containers continues to uphold that tradition of excellence, having been awarded more than 30 Clear Choice Awards from the Glass Packaging Institute.

SAINT-GOBAIN CONTAINERS

Saint-Gobain Containers is proud of its partnerships with many of America's most accomplished vintners and of the part its products have played in the growing worldwide recognition of American wines.

For more information, contact:

Saint-Gobain Containers
Marilyn La Grange
1509 S. Macedonia Ave., Muncie, IN 47303
tel: 765/741-7622
website: www.sgcontainers.com

PLEASE SEE SAINT-GOBAIN CONTAINERS ADS, PAGES 21, 37.

CORK SUPPLY USA, INC.

Cork Supply USA, Inc. (CSU) has a new approach to wine closures. The "Top of the Bottle" expert's products include natural corks in Alpha and Natura washes, large diameter corks for oversized bottles, 1+1, colmated, and sparkling wine corks. Through a sister company, Newpak USA: Nomacorc synthetic corcs, Rivercap tin capsules and, the newest member of the closure product line, SAVin: Deep, Drawn Pilfer Proof (DDPP) screwcaps from Metal Closures Group. (Please see separate listings for Newpak USA, Inc. and Rivercap USA, Inc.)

Cork Supply USA is a member of the Cork Supply Group, with companies in Portugal, Australia, and South Africa. The vertically integrated strategy begins in the forest where, through a partnership in Equipar, there is control over 250,000 acres of cork trees, that provides access to the best raw material and allows control from "forest to bottle."

With six GCMS machines worldwide, Cork Supply is a leading proponent of the SolidPhaseMicroExtraction (SPME) process for detection of TCA in lots of cork. SPME processes begin by testing raw bark at Equipar and Cork Supply Portugal before corks are punched. The SPME evaluations continue at Global Quality Control, the Group's independent testing laboratory. Finally, as a member of the Cork Quality Council, CSU's corks receive additional SPME testing at an independent enological laboratory in California. Lots are not approved with TCA levels above 2Ngl.

For more information, contact:

Cork Supply USA, Inc.
537-F Stone Rd., Benicia, CA 94510
tel: 707/746-0353; fax: 707/746-7471
e-mail: sales@corksupplyusa.com
website: www.corksupplyusa.com

PLEASE SEE CORK SUPPLY AD, PAGE 2.

M.A. SILVA

M.A. Silva Corks USA, an ISO9002-certified manufacturer established in Portugal in 1972, is a leading supplier of natural wine corks. Quality, integrity, and service have cemented the company as a leader throughout the U.S.

M.A. Silva manufactures and controls its entire production of natural, silktop 1+1, champagne, and bartop corks. The corks are processed using a proprietary "Maszone" ozone washing system, enabling the most thorough cleaning and sterilizing. Control of the whole process enables M.A. Silva to maintain high standards of uniformity in all of its products.

A full range of QA/QC checks on lots includes physical, chemical, sensory, and SPME analysis, both in Portugal and the U.S.

M.A. Silva continues to invest in new technology improving the quality, value, and consistency of its products. A new, innovative corkwood boiling system has just been introduced that has the following impacts:

- Greatly improved extraction of volatile compounds responsible for cork taint;
- Elimination of cross-contamination by continuous filtration and degasification of boiling water;
- Decreased possibility of undesirable fungi development;

M.A. Silva's professionals assure the highest quality standards of printing and surface treatment of corks using the best industry technology. Customer service supports high standards with prompt customer attention and on-time deliveries.

For more information, contact:
M.A. Silva Corks USA
975 Corporate Center Pkwy., #125
Santa Rosa, CA 95407
tel: 707/636-2530; fax: 707/636-2531
e-mail: info@masilva.com
website: www.masilva.com

PLEASE SEE M.A. SILVA AD, PAGE 35.

ETCHED IMAGES

Etched Images, located in Napa Valley, beautifully deep etches (sand blasts) and paints wine bottles with your logo, label, or message. Precise processes assure your bottle makes a lasting impression, whether for winery label reproduction to offer a marketing advantage, or as a corporate gift.

With cutting-edge technology, attention to detail, and the skill of in-house artisans, Etched Images creates works of art and provides excellent turnaround time and competitive pricing to suit any project!

Other services include:

- Bottle Blackening (dummy bottles);
- Sealing/Dipping "Wax," 14 stock colors, including metallics, and custom color blending;
- Full stock of competitively-priced empty bottles from 375 ml to 27 L;
- Small run, full color, die-cut vinyl wine labels that apply easily to wine bottles and wood box lids;
- Wine bottle/wine glass wooden boxes — artwork, logos, or messages can be laser-engraved into the lid;
- Order fulfillment such as tissue wrapping, labeling, product packaging, and drop shipping to multiple addresses;
- Worldwide shipping — we stock a full line of styrofoam shippers;
- Free pick-up and delivery of orders in Napa and Sonoma county;
- Refrigerated (55°F), Bonded Warehouse (BW 5999 CA).
- *No minimum order on etched and painted wine bottles!*

For more information, contact:
Etched Images
Kathy Feder
1758 Industrial Way, Ste. 101
Napa, CA 94558
tel: 707/252-5450; fax: 707/252-2666
e-mail: kathy@etchedimages.com
website: www.etchedimages.com

PLEASE SEE ETCHED IMAGES AD, PAGE 55.

RIVERCAP USA

RIVERCAP, a family-owned company based in Spain, specializes in production of premium quality tin capsules for the wine and spirits industries. **RIVERCAP** was founded in 1990 by Enrique Echepare, a mechanical engineer by training with 20 years experience producing one-piece punched capsules, originally tin-lead and, subsequently, pure tin.

A DIVISION OF NEWPAK USA

RIVERCAP was the first capsule manufacturer to exclusively produce tin from the outset. All punching, painting, and decorating machines are designed and built in-house. Each machine incorporates innovative improvements to increase decorating capabilities, to meet increasing demands of marketing and design departments.

Registered silkscreen colors on the side, and either embossed or silkscreened top decorations, are all standard features. Material thickness can range from 80 microns for the standard bottleneck finish, to 140 microns for new fat-neck bottles.

Sizes range from the 27.00 mm to 33.25 mm diameter for standard 750 ml bottles and larger sizes are available for 3, 5, and 6-liter bottles.

The **RIVERCAP** in-house design department can design and develop decorations to match labels, and colors are blended to match either Pantone references or a customer's particular color swatch. All paints provide superior resistance to scuffing.

"Let **RIVERCAP** put the finishing touch to your premium bottle of wine."

For more information, contact:
Rivercap USA
537-F Stone Rd., Benicia, CA 94510
tel: 707/747-3630; fax: 707/746-7471
e-mail: jbell@rivercapusa.com

PLEASE SEE RIVERCAP AD, PAGE 32.

CALIFORNIA GLASS COMPANY/ PACIFIC COAST CONTAINER, INC.

California Glass Company and its affiliates offer a comprehensive range of packaging goods and services to the wine industry, both nationally and internationally. The Cal Glass/Pacific Coast Container family represents Owens-Illinois, Inc. and St. Gobain USA, the largest North American manufacturers of wine bottles, and offers private and stock molds from numerous European and domestic manufacturers.

The combined companies maintain one of the largest sales and support staffs in the U.S. to address wine industry needs. Technical service representatives are on staff to troubleshoot line problems and an in-house graphics department can, in conjunction with your graphic design firm, turn artwork into a printed carton with minimum lead-time.

The array of products includes: bottles; wine glasses; label and case-seal adhesives; tin, polylaminate, and PVC capsules; plain and branded corks, including Duo Disc® technical corks, all from Cal Cork™; Ship & Store® wine packs; specialty corrugated cartons; and basket carriers.

Services include ACL decorating of glassware and bottles, up to three colors on both sides. Any PMS color including bright metallics can be matched.

For more information, contact:
California Glass Company
tel: 510/635-7700; fax: 510/638-7624
website: www.calglass-pcc.com
Contacts: domestic wine packaging, **Terry Sanzo** (ext. 172) or **Guy Gianino** (ext. 169); imported wine packaging, **Cindy Silvani** (ext. 122); corks, **Kim Murphy** (ext. 159); capsules and adhesives, **Mark Walheim** (ext.171); stemware and decorated glass, **Siobhan Poole** (ext. 174); cartons and graphics, **Guy Gianino** (ext. 169)
Pacific Coast Container, Inc. (WA)
Bernie Petays or **Gary McMahon**
tel: 360/892-3451; fax: 360/892-4955
Pacific Coast Container, Inc. (CO)
Mike Chavez
tel: 303/485-2498; fax: 303/485-5206

PLEASE SEE CALIFORNIA GLASS COMPANY AD, PAGE 25.

A B B LABELS

A B B Labels is a one-stop manufacturer that consistently provides total customer satifaction. A B B believes that ordering labels should be as easy as applying one. Starting with an idea, simple sketch, or complex graphics file, A B B Labels takes care of all details through final printing and production.

ABB LABELS®

The company offers a broad range of products and services to ensure meeting and exceeding customer expectations. The A B B graphics team accepts artwork in virtually any format; most simple updates are provided at no additional cost; color proofs are available upon request; and within hours after approval of art, the color separated films and plates are produced, and the job is scheduled for production. A wide variety of label types including custom labels, food packaging, and beverage bottle labels (up to eight colors) are available.

A B B Labels goes the extra mile for its customers with quick turnaround times, competitive pricing, full in-house graphics, and much, much more.

For more information, contact:
A B B Labels
1010 East 18th St., Los Angeles, CA 90021
tel: 213/748-7480, toll free: 888/Call ABB
fax: 213/748-5838
e-mail: Sales@ABBlabels.com
website: www.ABBLabels.com

PLEASE SEE A B B LABELS AD, PAGE 30.

SCOTT LABORATORIES

Scott Laboratories introduces roll-on, tamper-evident (ROTE) Alplast Chisure SpA aluminum capsules. Alplast (near Asti, Italy), was founded in 1954 and now produces more than 4.5 billion closures annually. Capsules are available in the long skirt (30x60mm) and other sizes.

Alplast capsules are produced on the newest machinery and printed using both lithographic and offset technologies (according to need). Artwork possibilities are among the broadest in the industry. Liner choices include EPE, Saranex, aluminum, or tin. In addition to the capsules themselves, Scott offers MBF machinery to apply ROTE aluminum capsules to bottles.

In natural corks, Scott is founding and continuing member of the Cork Quality Council, working to control and eliminate TCA. In 1999, Scott began screening all cork bales for TCA using SPME machinery at ETS Laboratories (St. Helena, CA). Beginning in 2001, this screening was supplemented by another SPME machine in Portugal to test corks before shipment from Europe. Ongoing improvement has been achieved. All lots are kept separate prior to testing to optimize usefulness of the system.

For champagne corks and wirehoods, Scott continues its long-term relationships with Relvas Corticas and ICAS SpA. Relvas Corticas has long been known for its innovative policies. All wood is purchased directly from the forest. Unique among champagne cork suppliers, all materials (including all granulate and discs) are sourced and processed in-house. ICAS is the world's largest and most advanced producer of wirehoods. It is the leading supplier in Europe, North America, and Australia.

For more information, contact:
Scott Laboratories, Inc.
PO Box 4559, Petaluma, CA 94955
tel: 707/765-6666; fax: 707/765-6674
e-mail: info@scottlab.com
website: www.scottlab.com

PLEASE SEE SCOTT LABORATORIES ADS, PAGES 26, 93.

PICKERING WINERY SUPPLY

Pickering Winery Supply distributes natural and synthetic corks from Heinrich Gültig, and tin and polylam capsules from VKN-Nachenheim, both in Germany.

Gültig has tested every bale from every lot of natural corks for TCA contamination since December 2001 using rigorous QA methodology. Using the SPME method and its in-house GC/MS, suspect lots are returned to Portugal. Because of their proprietary peroxide wash and unique resin coating, Gültig corks are among the most neutral available.

Gültig's synthetic stopper, VISION, is made by an extrusion process that guarantees uniformity, low SO_2 loss, and excellent shelf life. VISION also prints perfectly and performs during insertion and extraction just like a natural cork.

Gültig delivers corks by air weekly, arriving at the customer's door within days of passing outgoing QA. Samples from individual lots and their GC/MS scores are handled expeditiously.

VKN offers tin capsules from 95 microns and up. Four-color side printing, side embossing, and clear-top embossing offer virtually limitless design possibilities. VKN's abrasion-resistant coating protects your logo from scuffing when bottles are shipped neck down. In addition to regular polylams, VKN offers individually decorated Polux polylaminated capsules that are indistinguishable from tin except for the pleat.

For more information, contact:
Pickering Winery Supply
888 Post St., San Francisco, CA 94109
tel: 415/474-1588; fax: 415/474-1617

PLEASE SEE PICKERING WINERY SUPPLY AD, PAGE 22.

DEMPTOS GLASS

Demptos Glass offers over 300 wine bottle options from economically-priced standard shapes to ultra-premium heavyweight and specialty wine bottles.

New bottles include several 750ml Stelvin choices, a new 750ml Burgundy MENUET, and a 750ml Bordeaux Classique. To view one of the new bottles, call one of the sales contacts listed below and make an appointment to visit Demptos Glass' Napa, Fairfield, or Paso Robles, CA showrooms.

Demptos Glass stocks numerous styles and shapes in its Fairfield distribution center to help wineries avoid both long lead-times and minimum production quantities required by bottle production runs.

For more information, contact:
Demptos Glass
2300 Cordelia Rd., Fairfield, CA 94534
website: www.demptos.com
David Schwandt, Director of Sales & Marketing, tel: 707/718-4176
Julie Durkey, Sonoma, Mendocino, and Napa counties, tel: 707/718-4175
Phil Jones, Central Coast and Sierra Foothills, tel: 805/712-8862
Jim Gleeson, Napa and Lake counties, NW states, tel: 707/718-4174
Midwest and East Coast
tel: 502/394-9298

PLEASE SEE DEMPTOS GLASS AD, PAGE 49.

NEWPAK USA, INC.

Newpak USA, Inc. is a member of the Cork Supply Group of companies. Newpak USA supplies the synthetic Nomacorc®, MCG SAVin Deep Drawn Pilfer Proof (DDPP) screwcaps, and Rivercap tin capsules.

Newpak carries Nomacorc®, a leading synthetic closure with worldwide sales approaching 1 billion corcs. Manufactured in the U.S., it is a co-extruded engineered polyolefin corc. Nomacorc® inserts consistently, is sensorily neutral, and is easily removed from a wine bottle. Nomacorc® has been scientifically proven to provide the lowest oxygen transmission rate, giving wine longer ageability than previously available from synthetic corcs.

Newpak's SAVin "DDPP" screwcaps provide another closure alternative for winemakers. The SAVin cap can be printed with four-color designs on both the side and top. Liner choices are saranex or saran/tin. Stock caps are available in a standard 30 X 60mm size from the Benicia, CA, warehouse, and in a variety of sizes with custom orders.

Rivercap USA provides luxury tin capsules in a variety of sizes and designs. Please see separate listing for Rivercap.

For more information, contact:
Newpak USA, Inc.
Member of the Cork Supply Group
537-F Stone Rd., Benicia, CA 94510
tel: 707/746-5704; fax: 707/746-7471
e-mail: info@newpakusa.com

PLEASE SEE NEWPAK USA AD, PAGE 40.

SUBSCRIPTION ORDER FORM

☐ **YES!** I want to subscribe to PRACTICAL WINERY & VINEYARD at the introductory rate of only $31/year for 6 issues!

PLEASE PRINT

SHIP TO DATE: ______________

Name: ______________ Company Name: ______________

Address: ______________

City/State/Zip: ______________

PRICE — CHECK ONE

☐ United States resident: $31

☐ Foreign resident, Surface mail, $31plus $18 = $48 US

☐ Foregin resident, Airmail, $31 plus $20 = $51 US

PAYMENT METHOD — CHECK ONE:

☐ My check or money order (drawn on a U.S. bank) is enclosed

☐ Please charge my credit card (check box, fill in information below)

☐ Visa VISA ☐ MasterCard

Card Number: ______________ Expiration Date: ______________

Billing address for credit card: ______________

Telephone: ______________ Customer Signature: ______________

PRACTICAL
**WINERY
& VINEYARD**

BOOKSHELF ORDER FORM

58-D Paul Drive, San Rafael, CA 94903-2054
Phone: 415/479-5819 Fax: 415/492-9325

Please send the following books:

Quantity	Title	Price	Subtotal

Subtotal:
CA add sales tax:
Shipping & Handling: $4.50
TOTAL:

SHIP TO:
Name:
Address:
City: **State:** **ZIP:**

☐ My check or money order (drawn on a U.S. bank) is enclosed.
☐ Please charge my credit card (check one): ☐ Visa VISA ☐ MasterCard MasterCard

Card Number: Expiration Date:
Billing address for credit card:
Telephone: Customer Signature:

PWV BOOKSHELF

USE THE BOOK ORDER FORM IN THIS ISSUE • Your wine books promptly shipped from one source.

Concise Guide to Winegrape Clones for Professionals, 2nd Edition
John Caldwell
56pp—$39.00

Cooperage for Winemakers
Geoffrey Schahinger, Bryce Rankine
Manual on construction, maintenance, and use of oak barrels. User-friendly, informative text and photos. **112pp—$25.00**

Flowering and Fruitset in Grapevines
Peter May
This book will be valuable to all growers who need to understand how weather affects fruitset.Iis published by the Phylloxera and Grape Industry Board of South Australia in association with Lythrum Press. **120pp—$26.00**

Grape Pest Management, 2nd Edition
University of California, Div. of Agriculture & Natural Resources
400pp—$70.00

Growing Quality Grapes to Winery Specifications
Kristic, Moulds, Panagiotopoulos, & West
Monitoring and management techniques to help grapegrowers meet specifications required by their winery. **103pp—$32.50**

Micro Vinification
M.R. Dharmadhikari & K.L. Wilker
A practical guide for home winemakers, commercial small-scale producers, and large wineries making small, experimental lots of table wine. **145pp—$25.00**

Oregon Viticulture
edited by Edward W. Hellman
Comprehensive, easy-to-use guide to successful strategies for commercial vineyards in Oregon, combining expertise of university researchers with professional grape growers and winemakers. **272pp—$44.95**

Refrigeration for Winemakers
R. White, B. Adamson, B. Rankine
Original book (reprinted with corrections) that explains how to make most of refrigeration in the winery with a troubleshooting guide. **96pp—$18.00**

Spinning the Bottle
H. Posert & P. Franson
50 case studies in wine public relations promoting wine, wine companies, and wine-related issues is a must read for anyone managing a winery or marketing wine.
220pp—$39.95

Sunlight into Wine
R. Smart & M. Robinson
Quality assurance in vineyards, canopy management and economics, improvement of canopy microclimates, importance of winegrape canopies, construction of trellis systems.
88pp—$39.00

Synthesis of 7th International Symposium of Oenology of Bordeaux
Christopher Gerland **64pp—$39.00**

A *Zinfandel* ODYSSEY

DON'T MISS THIS DEFINITIVE ZINFANDEL LOVER'S TOUR OF CALIFORNIA'S QUINTESSENTIAL GRAPE.

100 interviews with Zinfandel growers and producers throughout California and Mexico.

450 pages including photos

Edited and published by ***PWV***

$60.00

The Taste of Wine
Emile Peynaud
A masterclass on the science, procedures, and vocabulary of the trade for the professional. An essential work of reference for the amateur.
258pp—$39.95

True to Our Roots
Paul Dolan, Fetzer Vineyards
Learn six guiding principles developed at Fetzer Vineyards to help managers build stronger, more sustainable companies.
201pp—$27.95

Understanding Wine Technology
David Bird
The science of wine is explained by a chartered chemist: constituents of grapes, complexities of fermentation, clarification, and stabilization. **226 pp—$30.00**

Using Grapevine Rootstocks, The Australian Perspective
Peter May
Use of rootstocks in Australia including physiology and factors affecting rootstock choice.
62pp—$19.50

Vineyard Simple
Tom Powers
Provides a clear outline with diagrams and color photos on how to build and maintain your own vineyard. **118pp—$19.95**

Viticulture, Vol. II, Practices in Australia
B.G. Coombe & P.R. Dry
Grapevine propagation, vineyard establishment, pruning, canopy management, irrigation, drainage and soil salinity, soil management and frost control; grapevine nutrition, grape pests, disease, protection.
384pp—$42.50

Vineyards in the Watershed
Julianne Poirier Locke
Sustainable winegrowing in Napa County including: erosion, water, weeds, soil, wildlife, cover crops, vine health, and organic farming.
181pp—$15.95

Viticulture & Environment
John Gladstones
Selection of site, variety, and cultural practices. Detailed climactic analysis of Australian and world viticultural areas, evaluation of new viticultural sites and possible changes in the climactic conditions.
310pp—$45.00

Wine Analysis and Production
B. Zoecklein, K. Fugelsang, B. Gump, & F. Nury
A practical understanding of quick screening assays, wet chemical and instrument analysis plus results and interpretation of winemaking.
512pp—$89.95

Winegrape Berry Sensory Assessment in Australia
E. Winter, J. Whiting, J. Rousseau
How to examine berries before harvest with 20 standardized and industry-tested criteria, by judging stems, skins, pulp, and seeds.
64pp—$28.00

Wine Grape Varieties in California
NEW!
edited by Christensen, Dokoozlian, Walker, & Wolpert
Guide to growers and vintners making decisions about variety plantings and growing practices. **190pp—$30.00**

Wine Growers Guide by Philip Wagner
Easy to understand essentials to establish a vineyard, pruning, training, vineyard management, propagating vines, and vine ailments. **240pp—$19.95**

Wine Microbiology by K. Fugelsang
Provides background information, step-by-step laboratory procedures, and interpretation of results. **245pp—$79.95**

Winery Utilities Planning, Design, and Operation
David Storm
Describes each of the major components of winery utility systems for planning, design, and operation. **550pp—$105.00**

Winery Wastewater Handbook: Production, Impacts, and Management
J. Chapman, P. Baker, & S. Wills
Examines the chemical nature of wastewater, its impacts, how it can be handled efficiently, and disposed of responsibly. **128pp—$21.00**

Synthesis of Seventh International Symposium of Oenology of Bordeaux

A 64-page book containing personal summaries by Christophe Gerland, French enologist, of 200 presentations in Arcachon June 19–21, 2003. More than 300 researchers and wine technicians from 14 countries gave real progress in oenological and winegrowing research, partially due to the arrival or maturity of new technologies deriving from molecular biology.

❧

THE SYNTHESIS CONTAINS FOUR TOPICS:

PART I: Viticulture and quality of grapes,
PART II: Wine microorganisms,
PART III: Vinification, ageing, and stabilization,
PART IV: Sensory analysis, wine components with physiological effects

❧

EACH TOPIC INCLUDES:

❧ General introduction with a global vision on the entire topic
❧ Detailed report of each presentation with a clustering of publications according to the speciality; such as: concerning microbiology; physiology, detection, identification, ecology, technology, genetic engineering of yeasts and then bacteria (including molds).
❧ Conclusion offering some broad views and new perspectives of field applications.
❧ A reference will be indicated for each quote, referring to the symposium-specific bibliography (listed as an annex by topic).

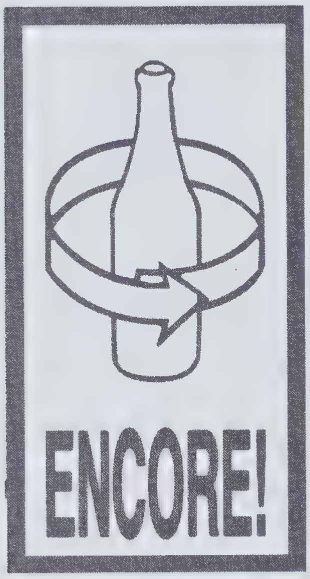
❧

This book is a very good tool for a quick overview of worldwide research on vinegrowing and winemaking, to help winemakers that are looking for quality improvement, and help students and researchers.

For sale on
***PWV* Bookshelf** for $39.

ENCORE!

ENCORE! has been supplying and serving wineries since 1975 and has grown to fulfill the glass and packaging needs of over 400 wineries in the western United States. ENCORE! has attained this growth by giving each customer the individual attention they deserve.



ENCORE! distributes more than 55 wine bottles in nine different colors with various finishes that range in size from 187ml to five liter. ENCORE! also carries a wide selection of European styles for special products and does label removal, bottle washing, sterilization, decanting, and repacking.

With over 28 years of experience, ENCORE! is a leading innovator in wine packaging to suit all needs whether they be bottles, ceramic decorating, litho cartons, specialty bottles, or just regular bottling needs. ENCORE! is very interested in what you want!

ENCORE! supplies molded wine shippers in two- and three-pack formats with matching cartons that meet Wine Institute/CAWG purchasing guidelines for sustainable packaging. The two-pack trays are available in two-, four-, six-, and 12-pack shippers; the three-pack trays in three-, six-, and 12-pack shippers.

For more information, contact:
ENCORE Glass, Inc.
860 S. 19th St., Richmond, CA 94804
tel: 510/234-5670; fax: 510/234-0433
e-mail: John.First@Encoreglass.com
website: www.Encoreglass.com

PLEASE SEE ENCORE! AD, PAGE 52.

GORDON GRAPHICS

For over 25 years, Gordon Graphics has been producing some of the finest wine labels in the industry. Specializing in multi-color printing, foil stamping, embossing, and precision die-cutting, Gordon Graphics has a reputation for producing elegant labels that sell wine.

Premium Printing for the Wine Industry

Client input during each stage of production guarantees the finest possible product with a minimum of surprises. More than 70 experienced employees work together with designers, marketers, and wineries to create award-winning packaging year after year.

Whether your need is for offset pressure-sensitive labels or traditional glue-on, the Gordon Graphics team will provide the expertise and service for which the company is known in both the printing and wine industries.

For more information, contact:
Gordon Graphics
15 Digital Dr., Novato, CA 94949
tel: 415/883-0455; fax: 415/883-5124
website: www.gordongraphics.com

PLEASE SEE GORDON GRAPHICS AD, PAGE 43.

RED WINES AND LONG-TERM DEVELOPMENT

Ready to bottle with screwcaps?

BY Tyson Stelzer

There's a new wave sweeping through the world of wine. Australia was the first hit, in 2000. New Zealand quickly followed the next year. Since then, it has surged to tidal wave ferocity in those two countries, and the swell is quickly spreading to other shores.

Screwcaps have arrived, ushering in the latest change in wine seal technology. Long-range forecasts predict a significant proportion of the world's wines under screw closure by the end of this decade. Despite these advances, many still doubt the viability of the screwcaps' long-term performance, particularly with red wine. But their concerns are gradually being laid to rest through experience and scientific study.

In 2002, the Australian trade publication *Liquor Watch* reported, "Professionals and consumers alike are still out deciding whether red wines should be sealed with screwcaps, and on this question, there will perhaps be the greatest debate." This debate has been waged in extensive detail in Australia and New Zealand.

"My view is when I have seen the evidence of wine — good wine — under screwcaps lasting 10 to 15 years, I will be more comfortable about using them," states winemaker Peter Bissell, summing up concerns of many of his counterparts. Bissell is responsible for an array of age-worthy wines from Australia's well-known Coonawarra region.

But among those who have long-term experience with screwcaps, the feeling is less skeptical. "I am very confident that red wine will develop correctly under screwcaps," states Keith Mugford, winemaker of long-lived Margaret River wines, under the Moss Wood label.

Three areas of concern are paramount for winemakers considering screwcaps for red wines: oxygen, seal integrity, and extended ageing.

1. Suffocated for good? Oxygen and wine ageing

Trevor Mast produces outstanding Shiraz in Australia's Central Victoria region. His Mount Langi Ghiran vineyards produce very long-lived examples of the style — but he will not bottle them under screwcaps. "Years back I bottled some reds under Stelvin," Mast recalls. "I found one a few years ago and it had separated — clear like water on the top and orange underneath." He speculates: "The conditions are just too reductive (lacking in oxygen) for the wine to develop."

Louis Pasteur was the first to proclaim: "It is the oxygen that maketh the wine." But studies have also increasingly shown that "Too much oxygen spoileth the wine."

The concern over too little oxygen is perhaps the most frequent criticism of screwcaps. The argument runs something like this: Red wines require oxygen to develop correctly. Corks allow oxygen to permeate through to the wine. Screwcaps do not. Hence, screwcaps cannot facilitate proper bottle development.

The most critical question is whether wine does require oxygen to develop correctly. Many winemakers believe it does, particularly red wines and full-bodied whites. Some even suggest the same is true for lighter-bodied whites.

"We bottled a 1978 Chenin Blanc under screwcap," recalls Hamish Thomson, winemaker at Best's Great Western in Central Victoria. "The non-aerobic ageing conditions meant that the acids and tannins dropped out but the fruit characters remained fresh and essentially unchanged. I suspect that oxygen is needed to produce development in the fruit. It's like leaving Chardonnay in the tank as opposed to putting it in barrel — there is less development in the tank."

Decades of experience with the development of Riesling have shown that aromatic whites can develop under screwcaps. For other varietals, however, there is still wide disagreement. "There have been some conflicting views about the intervention or non-intervention of oxygen in the proper ageing of bottled wines, and about the role of cork stoppers as oxygen barriers," observes John Casey, former chief chemist for Australian producer McWilliams Wines.

Casey notes the work of Jean Ribéreau-Gayon in France in the 1930s, which demonstrated that the maintenance of quality in bottled wines depended on the total or near-total exclusion of oxygen, and that cork stoppers could provide an adequate barrier to the entry of atmospheric oxygen. Recognition of this fact made it possible to develop other types of closures with oxygen barrier properties equal or superior to that of a cork stopper.

Less than a century after Pasteur's declaration on oxygen, he was challenged by the great- grandson of one of his own close colleagues and friends. In 1962, Jean Ribéreau-Gayon, Dean of the Institute of Oenology at the University of Bordeaux, announced, "The phenomena accompanying the development, maturation, and ageing of wine are poorly understood in detail because the nature of and the reactions of the substances oxidized transiently and finally are poorly known."

In 2000, Ribéreau-Gayon's son, Professor Pascal Ribéreau-Gayon, who had succeeded him as dean and continued his research, reported the conclusion of that research: "Reactions that occur in bottled wine do not require oxygen." His colleague, Emile Peynaud, went further, declaring, "It is the opposite of oxidation, a process of reduction or asphyxia, by which wine develops in the bottle."

After more than 70 years of research, the work of these French scientists on the role of oxygen in wine ageing is now regarded as definitive by researchers. Some winemakers still differ.

Dr. T. Chris Somers is among Australia's pre-eminent researchers in wine development. His work confirms Ribéreau-Gayon's and Peynaud's findings. In discussing data from spectral analysis of Shiraz wine stored in ampoules under nitrogen, Somers observes: "There is smooth continuous change in all parameters. In the same trials, the *presence of oxygen* led to erratic sequential measures, and eventually to induced turbidity and color loss." He also emphasizes that the presence of oxygen is a critical issue, "about which there has been some incorrect advice in the literature."

Ongoing studies in Australia are exploring the role of oxygen in wine maturation. While definitive results from these studies are yet to be released, the outcomes are already being anticipated by winemakers. .

"It is as if the wine remembers its exposure to oxygen," says Geoff Linton, technical manager at Yalumba (South Australia's Eden Valley). He explains that, even when the wine is completely sealed in glass ampoules, oxygen in the wine can act as a catalyst, enabling the wine to keep on maturing, with reactions continuing long after the oxygen has been used up.

"We still have much to learn in this area," suggests Richard Gibson of Scorpex Wine Services, former general manager of technical services at Southcorp Wines. "Just because wine can mature in the absence of oxygen does not necessarily imply that it matures well. There is still not enough understood about maturation reactions.

"Wines change without oxygen … whether this change is seen as desirable and in sync with expectations for maturation is another thing. Conversely, I have seen many bottles of wine that have been exposed to excessive amounts of oxygen … and it isn't a good look! Just because screwcaps work for whites does not, by implication mean that they work for reds. For instance, the whole issue of phenol and anthocyanin chemistry and changes at varying levels of oxygen exposure is a pretty big unknown that applies only to reds."

Predictably, the response is more confident among those who have released red wines with screwcaps. "Oxygen is not necessary for wine development," says Andrew Mitchell, who has bottled his Mitchell Shiraz from South Australia's Clare Valley under screwcap since 2001.

Clare Valley Riesling winemaker Jeffrey Grosset agrees: "There doesn't appear to be any support for the claim that wine requires oxygen for maturation." Chris Ringland, winemaker of such Barossa Valley wines as Three Rivers and Rockford adds, "I have not seen any evidence that an oxidative maturation environment is beneficial for ageing."

Despite the weight of such trials and opinions, there is a growing argument that oxygenation is not a simple black-and-white issue. There's more to it than just "oxygen or no oxygen."

"There probably is a role for oxygen in *some* reactions as wine develops, but not all," notes Linton. "Micro-oxygenation during wine production can add sufficient oxygen to sustain the development of a wine."

Peter Gago, Penfolds' chief winemaker adds: "Oxygen probably is necessary for bottle development. Ageing is not just a few simple reactions. It's a lot more complex than that, and some reactions need oxygen."

"Red wine under screwcaps technically is a 'no brainer,'" sums up past Yalumba director and screwcap advocate Peter Wall. "Marketing the idea — after telling the consumer for years that the wine 'breathes' under cork — is difficult. True wine scientists know that bottle development is a reductive, not an oxidative, process. It's about time that the truth is told."

Wall's argument is strengthened by the continuing preponderance of research evidence suggesting that wines do not require an ongoing source of oxygen throughout their development — but they do require the correct balance to start with.

A small amount of dissolved oxygen at bottling can be sufficient to sustain a wine throughout its life. This is supported by the development of wine under cork. While the average cork allows oxygen to permeate through to the wine, studies now reveal that a small percentage of the very best corks provide very effective oxygen barriers, similar to the performance of screwcaps. Under the conditions provided by these "very best" corks, wines are able to mature slowly and elegantly for exceptional lengths of time.

2. Sealed for good?
Long-term integrity of the seal

While it is known that some corks are capable of maintaining long-term integrity, some winemakers have concerns regarding the long-term performance of screwcaps.

"We don't know what screwcaps will do after many decades," explains Gago. "The polymer in the seal is said to be 'inert,' but this is only defined over a particular time frame. It may be inert for 10 years, but what about 20 years or even 50? We could be sitting on a time bomb, and we can't afford that risk. We just don't know how screwcaps will perform long-term."

Such caution is not without historical precedent. "We carried out a screwcap test with some 1969 wines," notes Jean-Bernard Delmas of Chateau Haut-Brion in Bordeaux, France. "This experiment was supervised rather strictly and precisely over 10 years. During the first eight years, we did not observe any noticeable difference between the closures.

"From the ninth year, we observed some deterioration of the screwcap. This deterioration became more pronounced during the following years. This fact induced us to stop the experiment, because most of the bottles stoppered with this system were oxidized. In practice, the plastic film used was hardening and breaking, and the wine was attacking the aluminium foil underneath."

"Today's seals are superior to those used 30 years ago," counters winemaker Michael Brajkovich MW, from Kumeu River Winery (near Auckland) and chairman of New Zealand's Screwcap Initiative. Chateau Haut-Brion used screwcaps with paper and cork layers — a combination that was later widely criticized for its potential to draw wine into the seal and corrode the cap.

"The sealing technology has progressed somewhat since then, and Pechiney will guarantee its Stelvin cap for 10 years against failure, provided that the correct bottle and spinning machine head are used," adds Brajkovich. "From what we have seen, they should last at least 20 years, which is plenty for us!"

Other screwcap manufacturers are equally confident of their product's reliability. The Australian company Auscap produces a "Supervin" product, a widely used screwcap said to be nearly identical to the Stelvin in both materials and design. "We're aiming for one-in-a-million defect," states Robert Arduca, general manager. "We would not be able to run this business with one-in-a-hundred defect, even one in-a-thousand."

David Leyland of Auscap's subsidiary, Australian Consolidated Industries, has been involved with screwcap trials since the early 1970s. "I saw no evidence of problems from the seals, even after 18 to 20 years," he reports. Dr. Bryce Rankine, who presided over the original trials, adds, "I have seen no evidence of the seals in contemporary screwcaps breaking down after extended cellaring."

Casey is more skeptical: "The major technical reservation with metal caps is their reliance on a relatively thin layer of resilient material. Over a period of time, there is a gradual loss of resilience. This can be seen in the permanent indentation of the wad." He equates this with the same phenomenon in corks, where, "Over a period of time, the sealing pressure gradually decreases … caused by a decrease in the stiffness of the cell walls."

This concern has not been supported by any screwcap trials to date. In the screwcap, the celloseal foam layer maintains the pressure. "This expanded polyethylene layer is pretty forgiving," states Arduca.

"I am not aware of any issues with celloseal losing its resilience over time," adds Leyland, after having slowly worked his way through 20- to 30-year-old screwcapped wines from his own cellar. Indeed, he describes the wines as "pretty good, still drinkable with no sign of oxidation," while the same wines under cork seal "went to vinegar years ago."

Winemakers' experience to date with screwcaps does not give reason to doubt their capacity to provide a reliable, long-term seal. But what if, through some unforeseen circumstance winemakers are one day proved fatally wrong? Arduca is ready for that. "If the cap were ever to deteriorate, it could easily be recapped at any time. This is easy to do."

Mugford suggests: "We will have to monitor the condition of the seal for the possibility of resealing." Although, as Dr. Rankine suggests, "They should never have to do this." Resealing is already common practice with corks. Grosset notes that recorking increases the chance of ending up with a cork-tainted wine. With screwcaps, recapping is not only a simpler process, but it also avoids the risk of taint.

3. Preserved for good? Question of extended ageing

While some winemakers question the ability of screwcaps to sustain a wine long-term, others suggest that screwcaps might increase the time required for a wine to attain optimal maturity.

Does a screwcap retard the development of a wine for so long that it effectively hibernates? Viv Thompson is one who believes that it does. Having first bottled wine under screwcaps at Best's Great Western in the late 1970s, he now suggests: "The problem with screwcaps is that Rieslings will go for 10 to 20 years in cork but 30 to 40 years in screwcap. That's too long to wait in screwcap."

Wine drinkers tend to be a little impatient. The most long-term wines put the best consumers to the test. But when screwcaps are added to the equation, it appears that the stakes are raised another notch. Of all the arguments and concerns raised against screwcaps, experts agree, the question of extended ageing time is the one that just might hold water.

"Screwcaps are the best thing for aromatic whites, but I'd hate to see them on reds," emphasizes Ross Brown, chief executive officer of Victoria-based producer Brown Brothers. "We've tried using them for years, and the wines just don't seem to develop. You want a good red to improve." An ironic comment, coming from the son of one of those so positive about the early 1970s screwcap trials. "I remember the trial quite clearly," recalls John Brown. "All of the closures failed except for the Stelvin, which sealed and kept perfectly."

But it is this very suggestion that leads some to question whether screwcaps might just seal and keep *too* perfectly. Stuart Blackwell of St. Hallett (Barossa Valley) says: "There are issues with white wines under screwcap — they're Peter Pan wines that don't age. But, we can solve this with dissolved oxygen to encourage development."

A more prevalent belief among those with experience is that red wines continue to age, but at a slower rate. "There is less development under screwcap, as indicated by the greater amounts of sulphur dioxide retained," explains Gago. "Wines develop slower, as our Tesco comparison of 1996 Bin 389 and 1995 Bin 2 revealed. The screwcapped version had aged like a wine in a really cold cellar."

Stephen Henschke (Eden Valley producer of Henschke wines) has had a similar experience. "In trials conducted since 1966, we have found that the Stelvin wine closure has been exceptional in eliminating cork taint, protecting the purity of the varietal fruit flavors, and enhancing and keeping the qualities by slowing bottle development. Although wine still develops in the bottle, the rate of development is dramatically reduced."

But exactly how much this development is reduced under screwcap is yet to be pinned down. At one extreme, Southcorp's Bill Seppelt declares: "My assessment and experience suggest that the development of maturation characteristics under cork compared to screwcap is a ratio of about four to one, but I have no data to prove it."

Henschke is more conservative. On the basis of a recent comparison of his 1995 Keyneton Estate (Shiraz-Cabernet-Malbec) from both corked and screwcapped bottles, he reports: "The screwcapped wine looked two to three years younger. Hence, it has developed at five-eighths the rate of usual ageing."

James Irvine, another Eden Valley winemaker, has a slightly different opinion. "It would appear that the whole maturation process — in both red and white wines — has been put into slow motion. The fruit carries on much longer, with mature characters developing at the same time as the wine holds its fresh fruit. I reckon screwcaps at least double the maturation time; although I wouldn't be surprised if the 2005 Grange under screwcap still tasted like a 10-year-old wine in 2060."

But perhaps, as with Peter Pan, it's not always such a bad thing to take a little longer to grow up? "Longevity probably will be increased, but not at the expense of drinkability," says Mugford.

Others are not so positive. "The downside of screwcaps is that we need to wait longer, but I don't want to sit on my wines for 30 years," says Michael Kerrigan, winemaker at Howard Park. However, this has not diminished his enthusiasm for bottling his long-lived Howard Park wines with screwcaps:

"Some of our Howard Park's 2001 flagship Cabernet/Merlot is under screwcap. We're releasing 2,500 cases of our premium Scotsdale and Leston Shiraz and Cabernet wines under screwcap. That's 100% of our domestic sales. I wanted to do the top labels first because I don't want people to say, 'You're not really serious about this.'" Kerrigan remains firmly committed to screwcaps, believing that the benefits far outweigh the longer time to reach maturity.

Regarding extended ageing, outright disagreement is uncommon. But a few winemakers present a different angle. "Old wines under screwcap are typically described as fresh," notes Mitchell. "People interpret this as meaning 'not mature,' but this is a different concept. These wines still have the full array of mature characters, but with life."

Grosset holds a similar view. "There's not much difference between the ageing time of the very best corks and that of screwcaps. If there were a significant difference, it would assume that the cork is influencing development of tannins through air ingress, and we know that this is not the case."

Among those who have had long-term experience with screwcaps, it is now generally agreed that the closure can provide an eminently satisfactory seal for wines destined for a long life. Oxygen ingress and long-term stability of the seal have not been problems in any recent screwcap trials.

Extended ageing time may well be the only criticism that this closure is vulnerable to. But one can question whether this is really a criticism at all. It is universally accepted that wines that age slower age better.

The very greatest old wines have matured slowly and elegantly, maintaining some of their fruit characters. Screwcaps make this possible for every bottle, potentially ironing out flat spots in a wine's development and elongating its ultimate drinking plateau. If it does take a bit longer to get there, that's a price consumers will decide for themselves whether they want to pay.

Despite these concerns, winemakers and consumers in Australia and New Zealand have increasingly come to appreciate the long-term potential of screwcapped wines, and their appreciation grows. Clearly, we should anticipate a wave of acceptance of this effective closure across the wine world. ■

References

Bourlioufas, Nicki. "Taking a Closure look." *Liquor Watch.* 18-26; October 2002.

Casey, John. "Closures for wine bottles — a user's viewpoint." *Australian Grapegrower and Winemaker,* 304: 99-107; 1989.

Eggins, Adam. "Stelcap on Red Wine — A Personal View." 2002.

Godden, Peter, *et al.* "Results of an AWRI trial investigating the technical performance of various types of wine closure. III. Wine sensory properties up to 20 months post-bottling." *Australian Grapegrower and Winemaker.* 453: 103-110; 2001.

Grosset, Jeffrey. "Grosset Gaia 2000 available in Stelvin." *www.winewise.com.au*

Rankine, Dr. Bryce, *et al.* "Further studies on Stelvin and related wine bottle closures." *The Australian Grapegrower and Winemaker.* 196, April 1980.

Rankine, Dr. Bryce. *Making Good Wine: A manual of winemaking practice for Australia and New Zealand.* Sydney: Macmillan, 1995.

Ribereau-Gayon, Jean. "Phenomena of oxidation and reduction in wines and applications." *Amer. Jour. of Enology & Viticulture.* 14 (3): 139-143; 1963.

Shanahan, Chris. "Case for screwcaps seems airtight." *Vintage Cellars Cellar News,* May 2002.

Somers, Dr. T. Chris. *The Wine Spectrum: An Approach Towards Objective Definition of Wine Quality.*

"The Stelvin Wine Closure." Australian Consolidated Industries, 1976.

Author

Independent Australian wine writer and scientist Tyson Stelzer is author of the new book *Screwed for good? The case for screwcaps on red wines.* He has also contributed feature articles and photography to numerous wine publications including *Australian & New Zealand Grapegrower & Winemaker,* and *Australian & New Zealand Wine Industry Journal.* Stelzer holds degrees in physics and mathematics and a Diploma in education.

SMART VITICULTURE *by Dr. Richard Smart*

Beauty, Viognier, and Smart-Dyson at R.H. Phillips

There are many beautiful sights in the world of wine, especially in extraordinarily pretty wine regions, such as Central Otago in New Zealand. One of my favorite views is of the roadside rows of Viognier at R.H. Phillips Winery (Esparto, CA), just before harvest. When exposed to the sun, the fruit turns a deep golden color. Vines trained to the Smart-Dyson trellis are a vertical wall of foliage more than six feet high. Against this curtain of green, it seems some artist has painted a midway strip of golden yellow. What a joyous sight.

While some of us may take pleasure from vineyard aesthetics, more are preoccupied with matters of profitability, yield, and wine quality. Here is the good news: Your vineyard can look nice *and* be profitable *and* deliver good quality wine at good yields. We can understand this by examining the R.H. Phillips experience.

Viognier and fruit exposure

I have visited R.H. Phillips several times. Once was for a workshop after a Unified Symposium in the late 1990s. I have long admired the innovation of Karl Giguiere, co-founder of the winery. Long interested in canopy management, he had devised a collapsible "V" trellis to facilitate mechanical harvesting. Karl and I discussed the Smart-Dyson trellis that day, and I later returned for a consulting visit where I gave my thoughts on the system.

Karl began using the Smart-Dyson trellis with Viognier in 1998, as he knew this variety responded to fruit exposure with enhanced wine flavor. The R.H. Phillips style called for full "stonefruit" characters, and they had contemplated achieving this by leaf removal.

With the first evaluations in 1999 on 45 acres, they found that the Smart-Dyson, by itself, increased fruit exposure, thus reducing the requirements for leaf removal. Subsequently, another 55 acres of vertically shoot-positioned (VSP) trellis were converted to Smart-Dyson. They used the specifications I have published previously in this magazine, (see Figure I) but added two downward rake wires in case they wanted to rake both sides. (Generally I find two wires unnecessary; one will usually do.)

Counter-intuitive benefits

Further evaluation was carried out on Cabernet Sauvignon, Merlot, and Chardonnay. A management program was devised to optimize fruit exposure for the two reds planted in north-south rows. The aim was to expose fruit on the morning side and to provide more leaf cover to the west to avoid the heating of the afternoon sun.

The Smart-Dyson trellis provides for exposure to the east; on the western side, the upward-trained shoots were not trained as carefully, in what some call a "lazy" or "part sprawl." The shade produced by these shoots provided the extra protection from the afternoon sun's rays.

The Chardonnay blocks that were converted to Smart-Dyson were of high vigor. Less fruit exposure was required compared to the Viognier. The major brand of Chardonnay at R. H. Phillips is "Toasted Head," which requires good color from amber fruit and full flavors from late harvest. The Smart-Dyson trellis has been found to provide this outcome.

Evaluation of Chardonnay on the Smart-Dyson trellis has provided an interesting, but counter-intuitive result. Most people divide the Smart-Dyson on the eastern side, thinking that this will provide less fruit exposure to the west, to avoid the afternoon sun. When I say divide to the east, I mean that the lower shoots are swept out on the eastern side. However, doing this actually *increases* fruit exposure on the western side, as the protective shoots for the lower tier are more on the eastern side.

To protect fruit from the afternoon sun, one should divide the Smart-Dyson canopy to the west. I can recall many vigorous discussions I have had on this topic with associates on the Central Coast. Because it is counter-intuitive, folks are inclined to disbelieve.

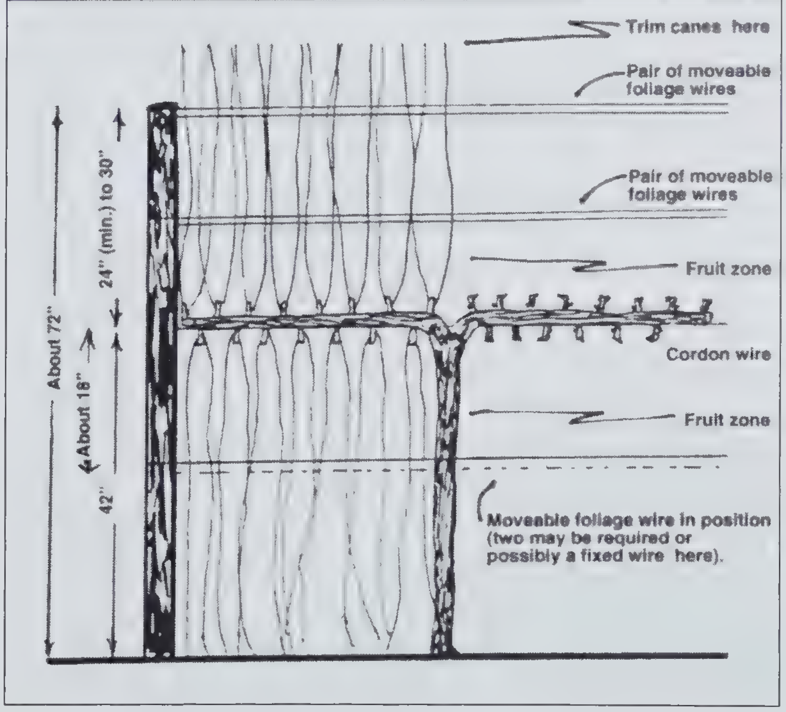
All conversions at R.H. Phillips have been accompanied by winemaking evaluation. I had interviews with the staff viticulturist Scott Thompson (trained at UC Davis) and research enologist and viticulturalist David Sorokowsky (trained at Canada's Brock University). They told me that they always leave a more fruit-shaded control lot of vineyard, and the wine from this has less varietal character.

Additional benefits

R.H. Phillips now farms about 1,850 acres of vineyard, 1,040 of which are on Smart-Dyson. Varieties include Viognier, Chardonnay, Merlot, Cabernet Sauvignon, Syrah, and Tempranillo. Smart-Dyson is now the only divided canopy used to any significant extent on the ranch.

Additional benefits are seen in Botrytis and mildew control. The open canopies avoid conditions that favor these dis-

Side view of Smart-Dyson trellis, showing vine in summer and winter.



Trim canes here
Pair of moveable foliage wires
Pair of moveable foliage wires
Fruit zone
Cordon wire
Fruit zone
Moveable foliage wire in position (two may be required or possibly a fixed wire here).
About 72"
24" (min.) to 30"
About 18"
42"

eases, and spray penetration is improved. Dave Bruer of Temple Bruer in South Australia has an organic vineyard and finds the same result. He says he could not maintain an organic regime without Smart-Dyson.

It has taken a while for vineyard crews to get used to the system, but with the same workers returning year after year, this has turned out not to be a problem. There is a need for management to watch the blocks carefully to work out timing for shoot positioning downwards, because tendrils become active (thigmotropic) at different times from year to year. Also water and nitrogen applications need to be watched to avoid excessive growth at this time.

Viognier is harvested by hand at R.H. Phillips, but Chardonnay and red grapes are easily harvested mechanically. However, some of the downward spur positions can be lost with machine harvesting, so it may be necessary to retain crown suckers in case cordons need replacing in the future.

The flexibility factor

One of the questions I am most frequently asked is, "Which training system should I use in my vineyard?" Generally, vignerons are unsure of how vigorous their vines might be, and they are trying to decide between VSP and a divided canopy. Unless the site is of very high vigor, to my mind the decision generally comes back to whether to use VSP or Smart-Dyson.

We've Grown
to Be the Biggest.
We're Proud
to Be the Best.

Vintage Nurseries...
Best Service, Best Selection and Best Value

It's always growing season at Vintage Nurseries where we continue to expand our services and our reputation for quality. As North America's largest grapevine nursery, we're able to keep production costs low and pass the savings on to you. We also set the standard for service, with free hot water dipping for pest control, free trimming, graft waxing and palletization, too. Our great selection and extensive inventory can meet even the largest orders. So add it all up and you'll see why Vintage Nurseries is proud to be #1.

V Vintage NURSERIES A CUT ABOVE

Wasco 661-758-4777
Modesto 209-523-8036
Paso Robles 805-237-8914
Santa Rosa 707-542-5510

800 · 499 · 9019
www.VintageNurseries.com

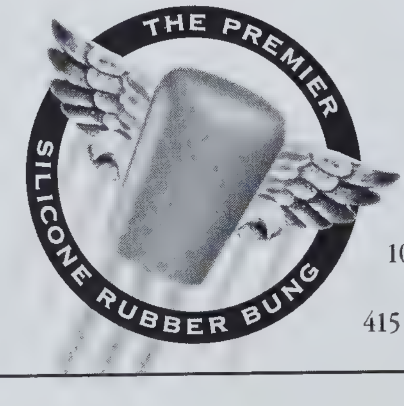
AGAJANIAN VINEYARDS, INC.

Confidential Commercial Merchant & Broker
Winegrape Procurement and Inspection Service

Call GARY AGAJANIAN
707-433-6654 or
Fax 707-433-6684

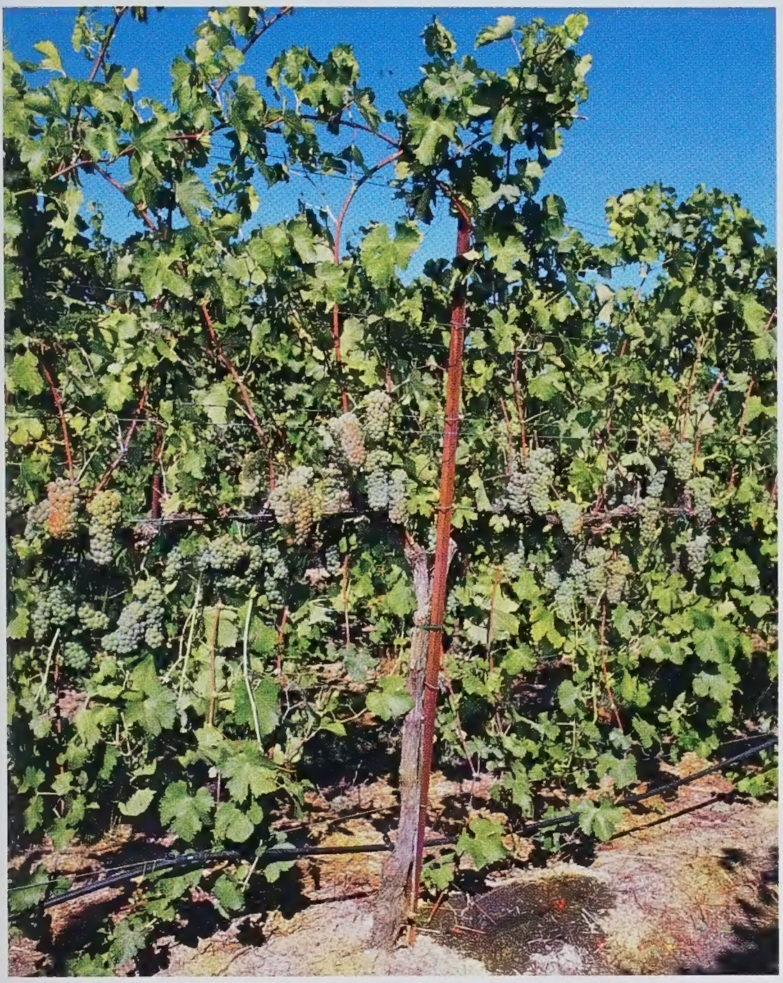
www.agajanian.com
gary@agajanian.com

First in Value & Service Since 1981


THE PREMIER SILICONE RUBBER BUNG

THE BOSWELL COMPANY

1000 Fourth Street • Suite 640
San Rafael, CA 94901
415 • 457-3955 • Fax 457-0304



Viognier on Smart-Dyson at R.H. Phillips at harvest. Extra leaves were removed to show cones.

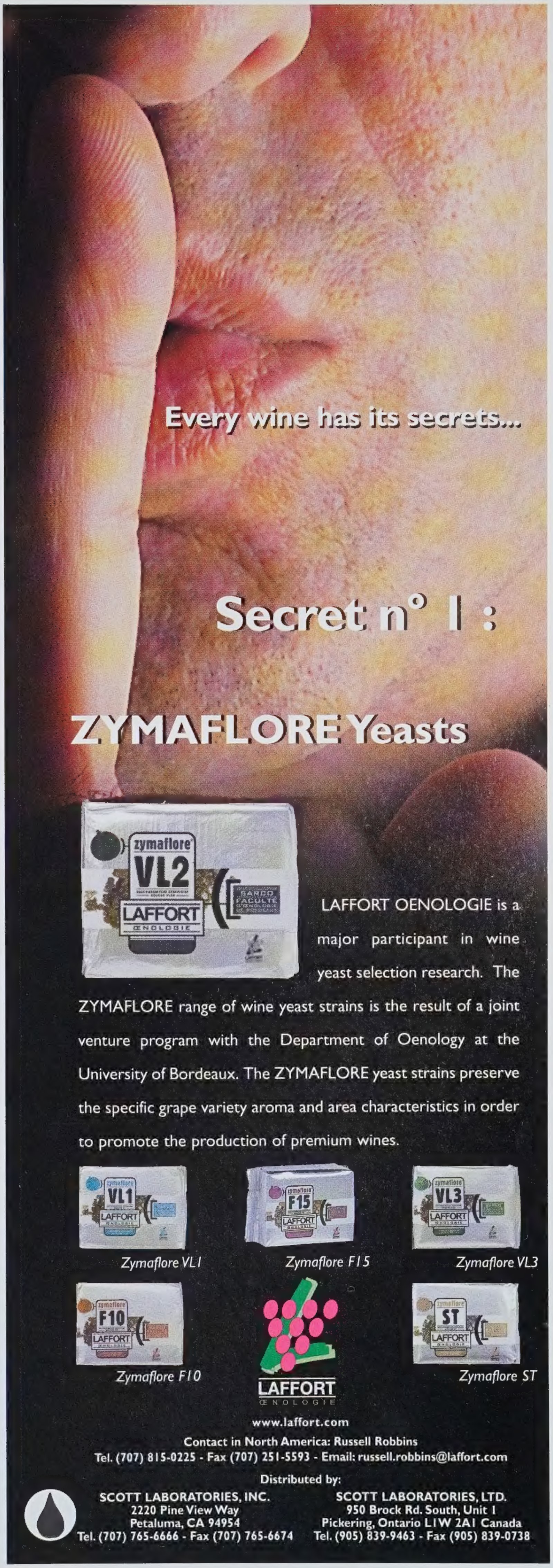
Intuitively, one thinks of using VSP, and then if vigor demands it, switching to Smart-Dyson. The problem here is that, in VSP training, all downward pointing shoots are removed, so one cannot readily convert to Smart-Dyson. The cordon will need to be replaced, and with mature vines this may lead to imbalance in the year of conversion, since too few buds are retained.

So I always argue for training initially to Smart-Dyson — the counter-intuitive approach. Then, if vineyard vigor does not warrant the divided canopy, remove the bottom spurs and convert to VSP. It is easier to remove spurs than regrow them!

Return to beauty

I return to my observation on beauty. Spare yourself a day and go visit R.H. Phillips just before Viognier harvest. Witness for yourself the golden splash in the middle of the green curtain and sigh. Then go taste the wines and be impressed! ■

Dr. Richard Smart, "the flying vine-doctor," is an international viticultural consultant based in Launceston, Tasmania, in Australia. He can be contacted by e-mail: vinedoctor@compuserve.com. Read about Dr. Smart's business, including his consulting schedule, educational wine tours, and seminars, at his home page http://www.smartvit.com.au. He visits America frequently and his consulting schedule is arranged by Vinquiry in Windsor, CA, tel: 707/ 838-6312 and http://www.vinquiry.com.



LAFFORT OENOLOGIE is a major participant in wine yeast selection research. The ZYMAFLORE range of wine yeast strains is the result of a joint venture program with the Department of Oenology at the University of Bordeaux. The ZYMAFLORE yeast strains preserve the specific grape variety aroma and area characteristics in order to promote the production of premium wines.

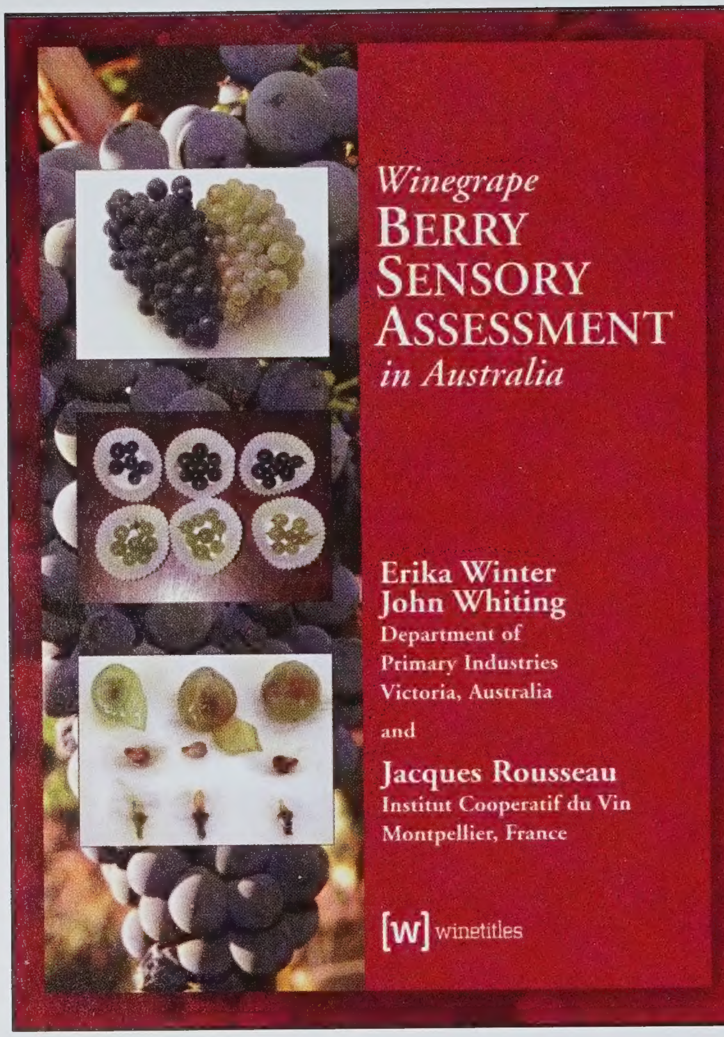
www.laffort.com

Contact in North America: Russell Robbins
Tel. (707) 815-0225 - Fax (707) 251-5593 - Email: russell.robbins@laffort.com

Distributed by:

SCOTT LABORATORIES, INC.
2220 Pine View Way
Petaluma, CA 94954
Tel. (707) 765-6666 - Fax (707) 765-6674

SCOTT LABORATORIES, LTD.
950 Brock Rd. South, Unit 1
Pickering, Ontario L1W 2A1 Canada
Tel. (905) 839-9463 - Fax (905) 839-0738



Winegrape
BERRY SENSORY ASSESSMENT
in Australia

Erika Winter
John Whiting
Department of Primary Industries
Victoria, Australia
and
Jacques Rousseau
Institut Cooperatif du Vin
Montpellier, France

[w] winetitles

For grapegrowers and winemakers, this is a guide for assessing berries for ripeness and harvest scheduling. It contains detailed instructions on how to examine berries before harvest, according to 20 standardized and industry-tested criteria, by judging stems, skins, pulp, and seeds. A 1 to 4 scoring system is employed which can be used in repeated assessments to build databases on varietal performance, and berry development over sites and years.

The aim of the book is to provide a basis for a uniform language on crucial berry attributes throughout the Australian wine industry.

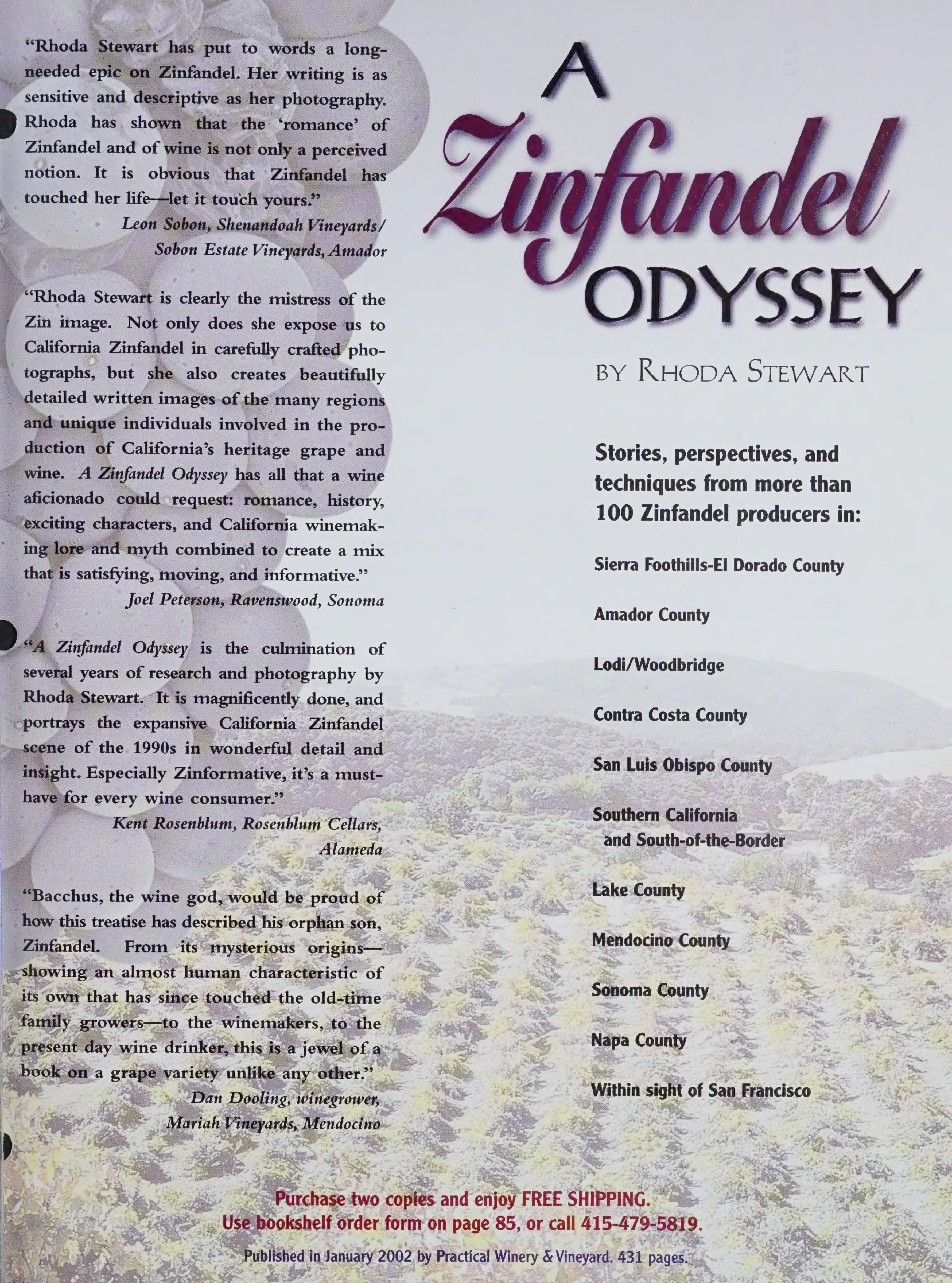
The method was designed by the Institut Cooperatif du Vin in southern France and was adapted to Australian conditions by Erika Winter and John Whiting, together with an industry reference group.

It will change the way you look at your grapes, help you to understand how berry characteristics change, and encourage you to monitor, assess, and experiment.

For sale on ***PWV* Bookshelf** for $28.

INDEX TO ADVERTISERS

ADVERTISER	PAGE	PHONE	FAX	CONTACT
ABB Labels	30	888/225-5222	213/748-5838	Pedram Fararooy
Agajanian Vineyards	92	707/433-6654	707/433-6684	Gary Agajanian
Agro-K Corporation	23	800/328-2418		Dennis Culver
American Ag Credit	6	800/800-4865	707/545-9400	Terry Lindley
Amorim Cork America	17	707/224-6000	707/224-7616	Daryl Eklund
Atago USA, Inc.	38	425/821-9050	425/825-5525	Frank Young
Lloyd W. Aubry Company	55	510/732-9038	510/732-3137	Robert Butler
Barrel Builders	54	800/365-8231	707/942-4291	Phil Burton
Barrel Master	63	972/980-4511	407/718-2311	Peter Benson
Bird Gard LLC	48	888/332-2328	541/549-5286	Terry Denzer
Boswell Company	31, 92	415/457-3955	415/457-0304	Jim Boswell
Bulldog Manufacturing	72	805/541-3083	805/544-6181	Gwen Othman
California Glass Company	25	510/635-7700	510/638-7624	Mark Silvani
California Seed & Plant Lab	38	916/655-1581	916/655-1582	Parm Randhawa
Castoro Bottling Company	75	805/467-2002	805/467-2004	Niels Udsen
Joseph Ciatti Company	11	415/458-5150	415/458-5160	Joseph Ciatti
Cork Supply USA	2	800/961-2000	707/746-7471	Justin Davis
Criveller Company	72	905/357-2930	905/374-2930	Bruno Criveller
Cuesta Equipment	18	800/549-9000	805/544-2627	Mike Jacinth
Demptos Glass Company	49	707/422-9999	707/422-1242	David Schwandt
DSM Food Specialties	51	610/650-8480	610/650-8599	
Duarte Nursery	18	800/GRAFTED	209/531-0352	John Duarte
Emmendinger Maschinenbau	60	49-7641-9242-0	49-7641-9242-67	Daniel Zibold
Encore!	52	510/234-5670	510/234-0433	John First
Enyeart Cedar Wood Products	39	800/551-6657	503/697-9385	Ron Enyeart
Etched Images	55	707/252-5450	707/252-2666	Kathy Feder
ETS Laboratories	22	707/963-4806	707/963-1054	Gordon Burns
Euro-Machines, Inc.	10	707/864-5800	707/864-5879	Matt Eiser
Gordon Graphics	43	415/883-0455	415/883-5124	G. Lindstrom
Government Liaison Serv.	59	800/642-6564	703/525-8451	James Hurson
Gusmer*Cellulo* Company	45, 65	559/485-2692	559/485-4254	Roger Pachelbel
GW Kent	8	800/333-4288	734/572-0097	Chantal Reichwage
Heritage Systems	68	707/258-0553	707/255-3152	Mike Long
House Manufacturing	27	800/327-8299	870/588-3517	John House
Hoyt Shepston, Inc.	19	650/952-6930	650/952-5691	Fred Hosking
Innerstave	16	707/996-8781	707/996-1157	Bob Rogers
JWB Marketing/Bird Gard	19, 34	800/555-9634	201/666-7581	Jim Burton
Kasco Marine	10	715/241-8227	715/355-9717	Bob Robinson
Kinsey Agricultural Services	15	573/683-3880	573/683-6227	Neal Kinsey
Lafitte Cork & Capsule	43	800/343-2675	707/258-0558	Barry Rucker
Lallemand	14	707/526-9809	707/526-9803	Gordon Specht
Lesaffre Yeast/Red Star	68	510/749-0194	510/749-0194	Kevin Harrity
Lodi Winegrape Commission	57	209/367-4727	209/367-0737	Mark Chandler
Lodi Winery Laboratory	74	209/339-1990	209/339-1975	S. Walker-Tansley
Logix Refrigeration Controls	39	425/828-4149	425/828-9682	Jim Conant
M.A. Silva Corks	35	707/636-2530	707/636-2531	Neil Foster
Maurivin Yeast/Burns Philp	48	559/268-4571	559/268-0619	Ozzie Bates
Mercier USA	26	707/251-5818	707/251-5811	Krimo Souilah
Napa Fermentation Supplies	42	707/255-6372	707/255-6462	Pat Watkins
Newpak USA	40	707/746-5704	707/746-7471	Justin Davis
Nomacorc	73	919/269-4728	919/269-7936	Malcolm Thompson
Packaging Arts	67	707/562-2787	707/562-2797	Dave Miller
Pickering Winery Supply	22	415/474-1588	415/474-1617	John Pickering
Premier Power	7	877/939-0400	916/939-0490	Deborah Millhollin
Ramondin USA	3	707/944-2277	707/257-1408	Melinda Elledge
Refrigeration Technology	42	800/834-2232	707/987-4581	Glen Marks
Rivercap USA	32	707/747-3630	707/746-7471	Jeremy Bell
Sabaté USA	28	707/256-2830	707/256-2831	Annette Barrett
St. Gobain Containers	21, 37	800/428-8642	765/741-7012	Marilyn LaGrange
St. Patrick's of Texas	75	512/989-9727	512/989-8982	Lynne O'Connor
Sanitary Process Components	74	877/288-8644	407/650-8944	Jacques Brin
Saverglass, Inc.	61	707/259-2930	707/259-2933	Erica Harrop
SCA Packaging/Thermosafe	69	800/323-7442	847/398-0653	Kevin Grogan
Scott Laboratories	26, 93	707/765-6666	707/765-6674	Steve Doherty
SPEC Trellising	71	800/237-4594	215/357-3122	Michael Schmidt
StaVin, Inc.	50	415/331-7849	415/331-0516	Alan Sullivan
Stoel Rives	59	415/617-8925		Christopher J. Carr
Stokes Ladders, Inc.	54	800/842-7775	707/279-2232	Jerry Hook
Sunridge Nurseries	63	661/363-8463	661/366-4251	Terry Stollar
SupremeCorq	29	800/794-4160	253/395-8713	Joyce Steers-Greget
Tonnellerie Boutes	24	510/799-1518	510/799-1557	Manny Martinez
Tonnellerie Quintessence	41	707/935-3452	707/935-3422	Brian Hartley
Tonnellerie Saury	47	707/944-1330	707/944-1370	Bayard Fox
Turf Seed, Inc.	53	800/247-6910	503/651-2351	Tom Stanley
TW Boswell	13	707/255-5900	707/255-5952	Ed Larmie
Vintage Nurseries	92	800/499-9019	805/758-4999	Jeff Sanders
Weed Badger	66	701/778-7511	701/778-7501	Jeffrey Anderson
Wine Country Cases	62	707/967-4805	707/967-4807	Dan Pina
World Cooperage	9, 96	888/33-COOPER	707/255-5952	Ed Larmie
WS Packaging	46	707/280-3736	707/795-7118	Randy Ramos



A *Zinfandel* ODYSSEY

BY RHODA STEWART

"Rhoda Stewart has put to words a long-needed epic on Zinfandel. Her writing is as sensitive and descriptive as her photography. Rhoda has shown that the 'romance' of Zinfandel and of wine is not only a perceived notion. It is obvious that Zinfandel has touched her life—let it touch yours."

Leon Sobon, Shenandoah Vineyards/ Sobon Estate Vineyards, Amador

"Rhoda Stewart is clearly the mistress of the Zin image. Not only does she expose us to California Zinfandel in carefully crafted photographs, but she also creates beautifully detailed written images of the many regions and unique individuals involved in the production of California's heritage grape and wine. *A Zinfandel Odyssey* has all that a wine aficionado could request: romance, history, exciting characters, and California winemaking lore and myth combined to create a mix that is satisfying, moving, and informative."

Joel Peterson, Ravenswood, Sonoma

"*A Zinfandel Odyssey* is the culmination of several years of research and photography by Rhoda Stewart. It is magnificently done, and portrays the expansive California Zinfandel scene of the 1990s in wonderful detail and insight. Especially Zinformative, it's a must-have for every wine consumer."

Kent Rosenblum, Rosenblum Cellars, Alameda

"Bacchus, the wine god, would be proud of how this treatise has described his orphan son, Zinfandel. From its mysterious origins—showing an almost human characteristic of its own that has since touched the old-time family growers—to the winemakers, to the present day wine drinker, this is a jewel of a book on a grape variety unlike any other."

Dan Dooling, winegrower, Mariah Vineyards, Mendocino

Stories, perspectives, and techniques from more than 100 Zinfandel producers in:

Sierra Foothills-El Dorado County

Amador County

Lodi/Woodbridge

Contra Costa County

San Luis Obispo County

Southern California and South-of-the-Border

Lake County

Mendocino County

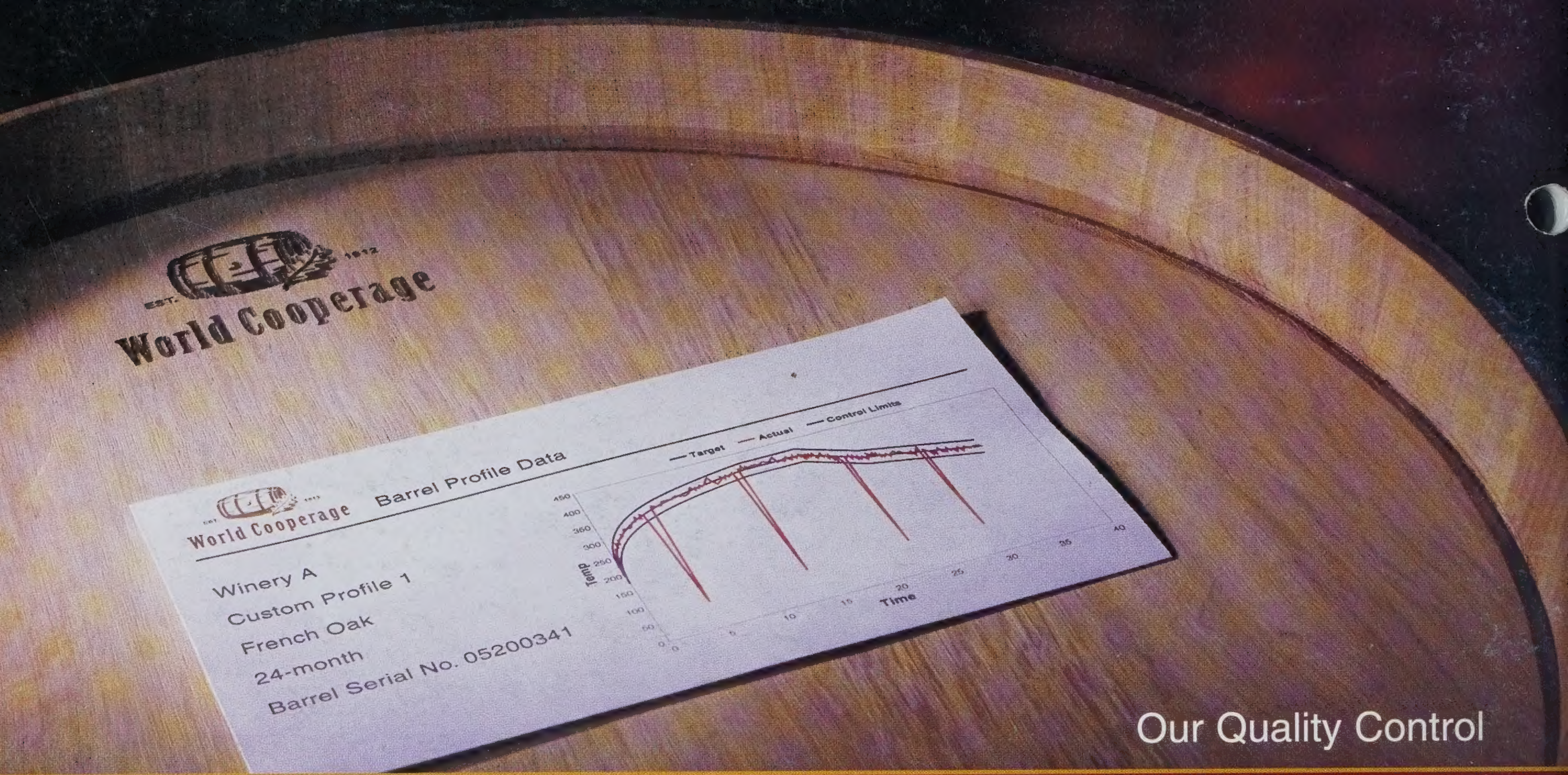
Sonoma County

Napa County

Within sight of San Francisco

Purchase two copies and enjoy FREE SHIPPING.
Use bookshelf order form on page 85, or call 415-479-5819.

Published in January 2002 by Practical Winery & Vineyard. 431 pages.



World Cooperage Barrel Profile Data

Winery A
Custom Profile 1
French Oak
24-month
Barrel Serial No. 05200341

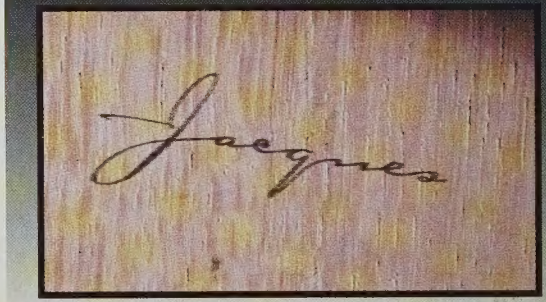
Our Quality Control

it's about creativity without surprises

Our revolutionary toasting technology known as "Barrel Profiling" provides different barrel styles, each with diverse, definable flavor profiles, all with guaranteed repeatability and predictability.

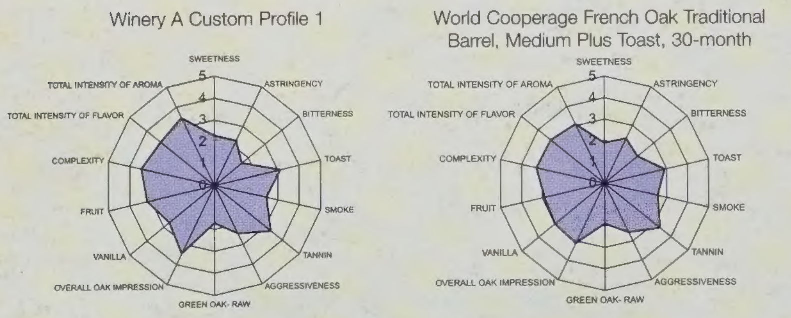
Barrel Profiling uses the latest temperature sensors, a computer network and touch screen monitors to toast every barrel we cooper. The cooper simply inputs that barrel's wood specifications and desired toasting profile. The computer directs the cooper to increase, decrease or maintain the barrel's current temperature so to follow the desired profile.

Their Quality Control



Our quality control prevents surprises if Jacques is out the day your barrels are toasted.

Sensory Profiles



You can review our current barrel profiles or you can custom create your own for your wines, your vineyards and even annual harvest conditions. You choose the profile you want, we then use our new toasting technology for perfect replication. Find your creativity, and feel confident, with World Cooperage.

EST. 1912
World Cooperage

Ask your account manager for our portfolio of Barrel Profiles.

1-888-33-COOPER (888-332-6673) or 707-255-5900. Visit www.worldcooperage.com/barrelprofiles for more information.